DOCUMENT RESUME

ED 039 280 24 UD 009 971

AUTHOR Moore, James; Stevens, William
TITLE Analysis of the Middle School Educational Programs.
INSTITUTION Seattle Public Schools, Wash. Southeast Educational Center.
SPONS AGENCY Office of Education (DHEW), Washington, D.C.
PUB DATE Jun 69
NOTE 106p.

EDRS PRICE EDRS Price MF-$0.50 HC-$5.40
DESCRIPTORS Affective Objectives, Cognitive Objectives, *Continuous Progress Plan, Educational Resources, *Individualized Curriculum, Individualized Instruction, *Individualized Programs, Nongraded System, *School Organization, *Secondary Education, Student Developed Materials, Year Round Schools
IDENTIFIERS Seattle, Southeast Education Center, Washington

ABSTRACT

The projected "continuous progress" plan to be featured by a Seattle southeast area Middle School is an integrated organization of professional educators, curriculum, instructional modes and media, facilities, and administrative management in a program which guides the cognitive and affective development of individual students throughout the program. The arrangement of students and programs through grades five to eight will focus most upon a combination of small groups and independent study. The student has a personal advisor and confidant in his teacher-counselor, who is directly responsible for his education. The program will be based on a twelve-month school year, within which the student may stop and start as he needs to. The planned enrollment in the Middle School will be 1,500 students in the age range nine through 14 years. In the Middle School there will be eight sections, each of which will be home base for 188-190 students in a nongraded organization. The advent of pre-prepared curriculum materials, and the freedom of the student to develop his own materials and to plan along with the teacher counselor, will yield materials for individualized learning. [For a description of middle school facilities, see UD 009 970.] (JM)

ED0 39280

SOUTHEAST EDUCATION CENTER

SEATTLE PUBLIC SCHOOLS

ANALYSIS OF THE MIDDLE SCHOOL EDUCATIONAL PROGRAMS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Project Director: Olaf Kvamme

Project Staff: David Fraser, Elmo Little, James Moore,
David Starr, William Stevens

Principal Writers: James Moore, William Stevens

UD009971

June, 1969

ACKNOWLEDGMENTS

This document terminates many months of study by the writers in collaboration with the project planning staff. Its immediate purpose is to describe the inner workings of a southeast area Middle School which will be organized to provide individualized instruction. Its longer range contribution will be to provide a frame of reference for structuring the educational events of all Southeast Education Center project schools.

The task was complex. It required extensive reading, consultations, personal observation, investigation, dialog among staff, writing, testing, and rewriting. During the process of completing the task, many shortcomings were revealed in educational practice, gaps and omissions in research, and fragmentations in developmental activities. Notwithstanding, it became increasingly clear that educational capabilities are far greater than commonly realized.

A major Southeast Education Center project goal is to shorten the gap between innovation and practice, and to this end the ideas expressed in this document are aimed. If they challenge existing concepts, if they stir educators to thoughtful reconsideration of existing conditions and practices, and if they help in some small ways to advance the arts of teaching and learning, the efforts of all who contributed will be justified.

To the researchers, the practical innovators, the administrators, the scholars and others, however named, who are probing the frontiers of educational practice, we express our appreciation.

Dale Goss
Director, Planning and Research Department
Seattle School District #1

Olaf Kvamme
Project Director, Southeast Education Center

The work presented or reported herein was performed pursuant to a grant from the U. S. Office of Education, Department of Health, Education & Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U. S. Office of Education, and no official endorsement by the U. S. Office of Education should be inferred.

INTRODUCTION

The analysis of the Middle School program, and, indeed of the whole Southeast Education Center program, is a development of many ideas which have been put through numerous testings and cross validations through the years. This analysis reflects much of the state of the art in those fields which have developed these ideas. These include educational psychology, developmental psychology, and other behavioral science domains. However, the analysis carries beyond the present state of the art and projects a future outcome of present trends in education and training science and technology.

At present the focus is upon training technology and theory. The components of learning are isolated rather than organized for learning. More effort is being made to identify "good teaching and instruction" than "good learning and construction," more to breaking apart the curriculum content into a sequential organization and structure than with exposing the student to the broad range of that content through which he may discover relationships and interact with content or organize the different aspects of that content in his own way. More attention is being given to identifying creativity than with developing a learning management system which helps the student to discover and identify his own creativity. More concern is being expressed about transmitting knowledge than revealing it through self-discovery.

Of the greatest importance in the analysis has been the body of knowledge and conceptualization about the intellectually inferior and the intellectually superior child. This body of knowledge has exposed many of the weaknesses in the treatment of the individual child in our schools. At the same time it has led to the development of techniques and a more reliable science-and-technology approach to the learning of the individual child. Many of the most significant findings upon which this analysis is based, therefore, are to be found in such studies as those by Gagne,[1,2,3] Skinner.[4] Taylor,[5] and in the variety of research journals and anthologies dealing with behavior modification. Other studies dealing with teaching the gifted child and with education of the intellectually gifted child or with the education and training of the mentally retarded child are rich in ideas and materials for working with any individual child.

It is most likely that credits for success in individualizing learning in the schools of the United States will ultimately be awarded to the first recognized "special children" of our Nation, the intellectually superior and inferior. They were the pioneers who in their way told us about the vastness of the human mind and of its limitations. In the end it will become increasingly clear that all children are special.

-- James S. Moore

[1] Gagne, R. (ed.): Psychological Principals in System Development, 1962.

[2] Gagne, R.: The Conditions of Learning, 1965.

[3] Gagne, R. (ed.): Learning and Individual Differences, 1967.

[4] Skinner, B. F.: The Technology of Teaching, 1968.

[5] Taylor, C. W. & Williams, F. E. (eds.): Instructional Media and Creativity, 1966 (and other proceedings of the University of Utah research conferences on creativity).

CONTENTS

Chapter	Title	Page
1	THE EDUCATIONAL PHILOSOPHY	1
2	THE EDUCATIONAL PROGRAM	7
	PART A - PLANNED ENROLLMENT	10
	PART B - STUDENT ORGANIZATION	11
	PART C - STAFF ORGANIZATION	14
3	CURRICULUM AND PROGRAM	22
	PART A - THE STUDENTS	22
	PART B - THE TEACHER-COUNSELOR	29
	PART C - THE INDIVIDUALIZED CURRICULUM	35
	PART D - THE INDIVIDUALIZED PROGRAM	49
	PART E - THE CURRICULUM AREAS	59

Chapter 1

THE EDUCATIONAL PHILOSOPHY

Continuous progress is a system of individualized instruction. It is a unified and integrated K-12 organization of professional educators, curriculum, instructional modes and media, facilities, and administrative management in a program which initiates, reinforces, and maintains cognitive and affective behaviors of the individual student throughout the K-12 program. Definite school divisions are indicated relative to the student's physical, intellectual, and emotional characteristics. However, some experiences within these divisions permit the student to stretch his capacities and are thus characteristic-irrelevant, but based upon the measured potential of the student. At lower levels the student will experience the broadest kinds of exposure. At higher levels he will intensify his learning and narrow it. The total system is oriented always toward the individual student.

Education and Training

The two functions to be served in this system are education and training. The formal school is a foremost agent for the initiation and systematic reinforcement of factual knowledges, concept comprehensions, and intellectual-visual-motor skills. These three aspects are rooted in three environments; namely, the intrapersonal or psychological, the interpersonal or social, and the biological-physical.

The program is designed to accommodate the requirements of each individual for creative, productive problem solving behavior in these three environments. The school can accomplish such a program mainly because it is the one public institution which can blend together in a single setting the diverse elements of society and the physical world for its students. In this blend, the majority focus is upon the curriculum content and upon the strategy with which the content is made available to the student. The mediums with which the content is presented, for example, teaching machines, computer terminals, film-loop projectors, and so forth, are important, but secondary concerns of this new approach to education and training.

Knowledge and Strategy

The main emphasis in the developmental stages of the program will be, first, upon rewriting and reorganizing factual knowledges, concepts, and skills to conform to the needs of individual students, and, second, upon a versatile approach to the strategies with which the students receive the content. These strategies open up the system within which the students receive the content so that they are not limited in the kind and degree of learnings and exposures.

Creativity

Educators realize that the formal school program should and could encourage greater creativity among students. Although more must be learned about what comprises creativity, it is well known that the more a student understands and uses the inductive-deductive reasoning process, the more insightful he is into a variety of problems and tasks.

In any formal school educational program, at least four conditions contribute to greater creativity. First, a flexible curricula, together with a flexible time in which this curriculum may be presented. When there is a large amount of required material to cover, the educator may become less tolerant of unusual ideas or apparently off-the-track statements, no matter how interesting. The end of the month or of the school year sometimes tends to approach psychologically so rapidly that the conscientious educator is filled with a desire to cover the necessary or required material and becomes less tolerant of error, or diversions, or unique responses.

Second, teaching in content areas in which they are well versed and/or understand the management of learning well enough to teach the content. Educators recognize that ignorance or lack of knowledge on their part is a powerful inhibitor of student freedom. Many educators are concerned about allowing too much freedom when they themselves lack the ability to evaluate the unusual or different thoughts that occur.

Third, accepting more than one source as valid and reliable. The use of only one reference, such as a single textbook, inhibits creativity. This allows conflicts between textbooks to go unrecognized. Facts rather than ideas are apt to be considered.

Fourth, allowing discussion or evaluative statements on the part of the students. In many cases, the only act of student participation is the reiterating of factual statements. The student may hear that there is only one right way to do something. This discourages imaginative approaches by the student and will, if continued over a long period of time, inhibit creative responses. The student should be encouraged to consider alternatives in solving problems.

Language Skills

One aim of the continuous progress, individualized school program is to help each individual student become a functioning member of society. The student who can read the relevant verbal and quantitative languages can make more rational decisions within society. These languages, both native and foreign, are found everywhere; the student will use materials appropriate to his abilities to learn. He may read technical books, fictional books, nonfictional books, professional journals, technical journals, popular magazines, political and social opinion journals and magazines, and newspapers. He will, according to his needs and characteristics, read words, numbers, symbols, sentences, paragraphs, chapters, columns of numbers, rows of numbers, tables, charts, and graphs. The focus will be upon the student's becoming knowledgeable, skilled, and concept-oriented in his role as a member of society.

Communications

If the student is sure of his knowledge, skills, and conceptualizations, and is allowed to express them in his own way, then his communication techniques will be functional and effective. Such understanding of and use of communication nets allows the individual to progress at his own pace in his own materials toward that universal objective of problem solving and career development. The program will allow each student to develop and use the communication techniques most appropriate to him. For some it may be mainly by talking. For some it may be mainly writing. For some it may be mainly through art, music, dance, or drama, involving some of a variety of other communication mediums. The program will allow the student to pursue as many subjects and areas of knowledge as he requires. Through the use of better prepared materials and through development of his own materials, the student's exposure can be as broad as his interest and as deep as his motivation.

The program will help students make rational decisions with a minimum of dependency; it will direct them toward an education and training in the intellectual tools for career development; and, most important, it will help students discover the great and lasting ideas which thread through all areas and domains of knowledge and the conceptualizations which tie them together. In accomplishing these goals, the school program emphasizes the interrelatedness of knowledge, concepts, and skills; focuses upon the refinement of learning and instruction; and works to maximize the intellectual and emotional growth of the individual student in the ways that are most significant to that individual. Administrative convenience is secondary, and the school organization is structured so that the individual student is in focus at all times, in all places, and in all activities.

Because of the characteristics of students at different ages, the school program is subdivided into three components, each of which is unique but all of which overlap and interrelate. These three components comprise what are presently referred to as Grades K through 4, Grades 5 through 8, and Grades 9 through 12. The chronological age range for each component has a degree of flexibility that permits a student to move through the program comparatively free of the age barrier.

Lower School

In the Lower School (Grades K-4) the arrangement of students and program will focus most upon small group learning. The biggest job at this level is placing the individual with other students in such ways that the student's needs are met and so that the teacher-counselor can begin to record and use psychological, social, and intellectual data about the student. These data will lead to trend analysis showing strengths and weaknesses of each student. The emphasis will be upon small groups and close relations between the educator and the group and the individual students. This provides the educator with insights into the social and psychological interplay among the students and within each student.

The student systematically will be presented with experiences in the curriculum domains of science-technology; fine arts-humanities; business-industrial-homemaking; health-physical fitness and recreation; social studies-social sciences; mathematics-statistics; and language development. These will be geared to, and appropriate for, his intellectual and physical level of development. It is the student's uniqueness that the primary component of the system is designed to uncover. To do this, more professional educators per student will be required than at any other level.

Middle School

In the Middle School (Grades 5-8), the arrangement of students and program will focus most on a combination of small group and independent study. The student will be presented with experiences in all areas of discipline, but also there will be opportunity for more intensive study within a particular area. The focus will continue upon the individual student and his intellectual and physical development. There will be an even greater emphasis upon his developing independence in selecting and pursuing his own learning experiences. He will be part of a group in the sense of identifying with a team of educators, but grouping will be of the kind and degree that will best serve his own needs.

Upper School

In the Upper School (Grades 9-12), the program will maximize the opportunity of the student to intensify his learning and to strongly emphasize the strengths that have been developing in the previous years. The focus is more upon independent study and such groupings that will facilitate his personal and intellectual development. The unified and integrated curriculum will lead at this level to specialization within and among one, two, three, or more areas of knowledge. At this level the student will, more than ever before, choose his course of study. Teachers will be subject area trained and will be organized in interdisciplinary teams. At this level a significant amount of the program time can be spent physically outside of the school so long as the psychological, social, and biological-physical needs of the student within the program are the focus.

Pupil-Teacher Ratios

The nature of the education and training programs at each major level within the Southeast Education Center directs a different teacher-counselor: student ratio.

The nature of the program at the Lower School level is close, moment-by-moment contact between the teacher-counselor and the student. The teacher-counselor must be close to the student during most of the school day so that he can most effectively initiate, reinforce, maintain, and find ways of generalizing what the student is learning. Personal characteristics are forming in the most subtle ways at this level, and the teacher-counselor will need to identify trends quickly and effectively so that when the trends need reinforcement, this is quickly given. Children's needs at this level can best be met in small groups which provide feedback on the interaction of the individual student with the group. Such close, interpersonal contacts between the teacher and the student at this level provide the key to the student's success in becoming independently able to pursue his own learning at the other levels. Future patterns of behavior are established in these early years; therefore, a pupil-teacher ratio of not more than 1:20 is justified.

The nature of the program at the Middle School level is a combination of close, moment-by-moment contact between the teacher-counselor and the student and a gradually increasing freedom for the student to pursue his learnings independently. The student will study in depth and for longer periods of time in a given subject if that is his need. The student's personality characteristics acquire greater form and the teacher-counselor will be surer than ever of their directions. He will maintain close interpersonal relationships with the student only according to his need. There will, however, be gentle pressure by the teacher-counselor to direct the student to make his own decisions. The student's increased decision-making powers will prepare him for the greater responsibilities he will assume at the upper level. The pupil-teacher ratio recommended for this level, therefore, is 1:25.

The program at the Upper School level leads to a higher form of independence. It is based on specialization. The student will spend more time on studies of his own selection. His achievement in, and mastery of, many subjects will have, by this time, reached the point of diminishing returns; and if he returns to them later, it is because he directs such returns. He will specialize in subjects which have a commonality to each other and a relevancy for the student. This relevancy is mainly in career development.

The student may spend most of his time in physical science and mathematics, or Russian literature, general linguistics, and creative writing. He may spend most of his time in behavioral sciences, statistics, and electronic circuitry. He may spend his time in computer programming writing interactive languages, in behavioral science designing instructional systems, and in space science studying man-machine systems in relationship to future aerospace flights.

The student will not need the broad, general exposure to subjects that is true of the present program. His teacher-counselors will not need the close, moment-by-moment contact that is typical of the present program. There will be more time for the student to pursue his learnings outside the main school. However, the teacher-counselor will still have the responsibility for working with the student in program planning to ensure the success of that program planning.

Much more time than at the present will be available to the teacher to work with program components to make sure that they are suited to the student. The hope among some educators of spending less time with the student, of having more time to plan programs, and of having fewer students at any one time will be realized at this level. The one difference will be that the teacher will have a responsibility for more students' programs than at present. The ratio recommended, therefore, is 1:40. It is to be strongly emphasized that this is not the "average class size" but the number of students whose programs are under surveillance by the teacher-counselor. Such surveillance is not as constant as it will be in the Lower School and in the Middle School. The student is working at the Upper School level primarily on his own and for longer periods of time.

The teacher may often meet groups of 15 and occasionally lecture to larger groups. He may tape talks for television programming. Students will have much more individual contact with teachers. This may be at the time when the student asks for replay of a tape. It may be when the student confers with a teacher after a lecture. The surveillance over the programs of those 40 students by the teacher-counselor is, therefore, not as demanding as first may appear. The career development trend of most students should be established in the Lower and Middle Schools.

In the main, except where clarification of the relationship among the three main levels is required, this document is concerned with the Middle School.

In summary, several significant aspects of this educational philosophy are clear; namely:

The student has a personal advisor and confidant in his teacher-counselor, an adult who is directly responsible for the welfare of that student's education and training program.

The student is involved in an education and training program which affords him maximum opportunity to find value in his learnings. The program ensures that those learnings are *individually meaningful* to the student whether he is in isolation or in groups of other students. (*Individualized learning* does not mean the *individual student in isolation*.)

The student has a definitive education and training program every moment of time he is *within the school* and when he is *outside of the school* engaged in activities related to his program. The program is oriented toward the initiation, reinforcement, maintenance, and/or generalization of cognitive and affective knowledges, skills, and conceptualizations in the psychological, social, and biological-physical environments.

Both the student and his teacher-counselor will find more time for in-depth study and investigation into topics, projects, concepts, and processes which have captivated them.

Chapter 2

THE EDUCATIONAL PROGRAM

The educational philosophy will be implemented in the Southeast Education Center and in the Middle School in the following ways:

First, the student works with his teacher-counselor in such a way that the focus is upon the student's characteristics and needs and so that independent study becomes more and more the learning mode used by the student.

Second, the staff of teacher-counselors, administrators, aides, and clerical and service personnel are organized and directed in such a way that a variety of specialized talents are available to the student when he needs them.

Third, the administration of the Center and the Middle School allows and encourages innovation and experimentation and the application of unique, individual, and differential solutions to the problems and questions arising from the individualized program.

Fourth, the advent of pre-prepared curriculum materials, and the freedom of the student to develop his own materials and to plan along with the teacher-counselor, will bring a variety of packaged and ready-made materials which can be used to individualize and customize learning.

Fifth, a building-and-facilities planning program of research and development will initially result in a Middle School structure designed to encourage the program outlined above and will result in remodeling and additional construction along the same lines.

Sixth, and last, the program will be based on a 12-month school year. This means that programs will be available for students who need a longer term. The student, with a minimum program in mind, may stop and start within that program as he needs to. For example, if illness keeps a student out of school for weeks at a time, his program can be adjusted.

Currently, summer school programs are available for basic education and enrichment. These are designed both for make-up and a cultural enrichment. It is interesting that the summer school program often captures the intent of individualized learning. The term is short and often geared to the level of the child and to his motivation. In extending the school year, it is intended to extend the regular program in just this way while at the same time focusing upon the individual student and his needs.

Stop-Start Capability of the 12-Month School Year

The stop-start capability of the 12-month school year permits the student to do any or all of the following: One, leave the program when he needs to and for as long as he needs; two, return to the program and pick up where he left off without difficulty; three, return to the program and participate in refresher courses; four, return to advanced programs because of progress while absent; five, return and enter into a new aspect of his previous program or into a totally new program because of new experiences. While minimum attainments will be expected, the routes will be flexible within the 12-month school year.

The stop-start capability also will allow flexible ways for the staff to work out contracts, some during the fall and winter, some during the winter and spring, some during the spring and summer, some during the summer and fall, or some periodically throughout the year. In the 12-month school year, there will be an overlapping among the staff to cover the program needs. There may be a variety of contracts, some of them 12-month, some 11-month, some 9-month, or some even shorter. This will, however, allow the staff greater choice of time for additional training, vacations, self-improvement activities, research or planning.

Finally, this stop-start capability permits more flexible use of the facilities and buildings than does the 9-month term.

In the 12-month school year, some facts are clear. One of these is that most of the students, because of traditional practices, will want to be in the program between September and June. But as the options become more clear to students and parents, the school load will become more evenly distributed throughout the calendar year.

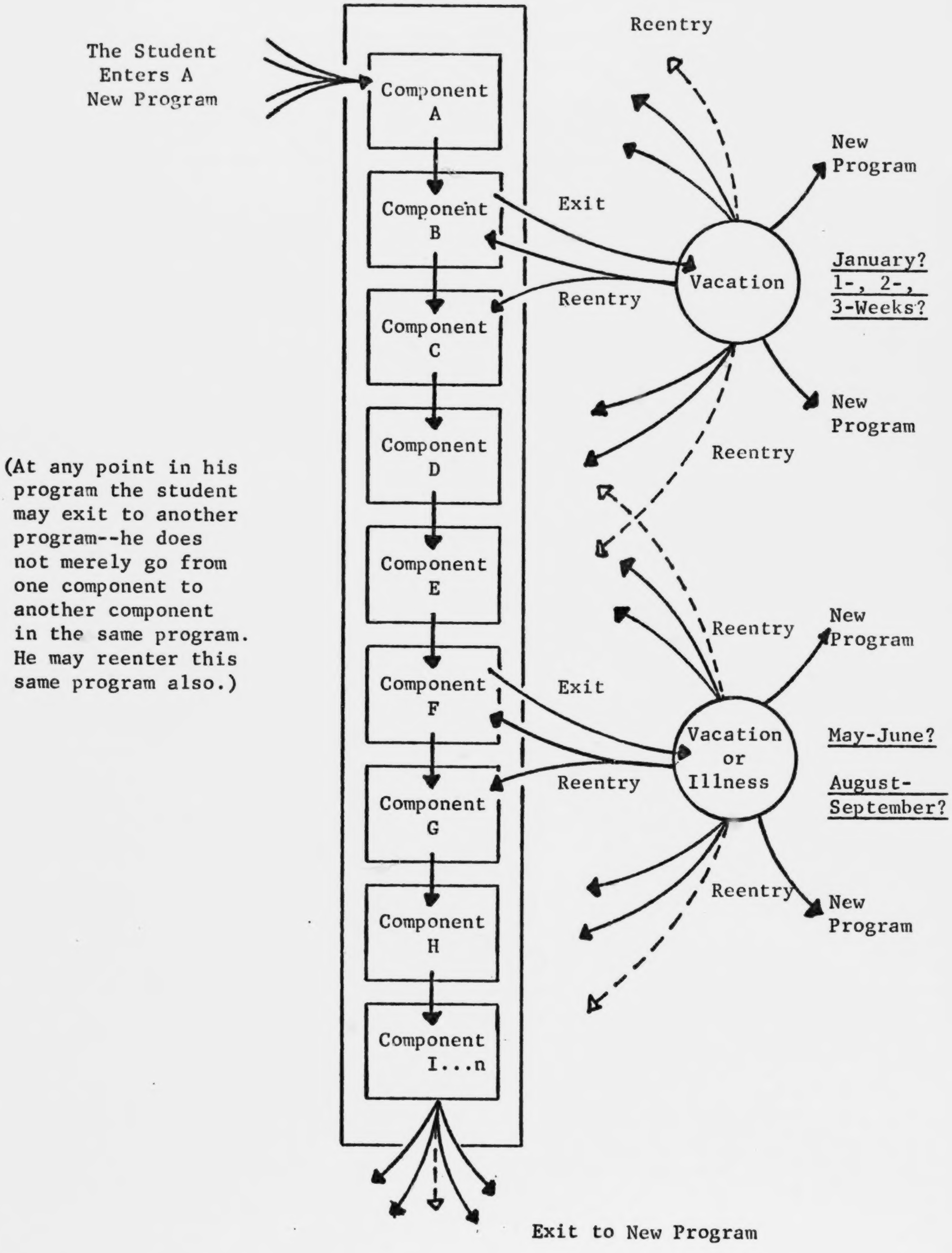
Changes in the Present System

The educational program will represent the following changes and/or improvements in the present program: First, a curriculum content to teach all personnel the process of problem solving, task accomplishment, and question answering in the psychological, social, and biological-physical environments; second, assignments and projects oriented toward the individual student and carried out under competent and flexible supervision; and, third, a program in which the student is brought into maximum contact with the many available talents of the professional and nonprofessional staff and the professional resources of the community. The educational concept will reveal that knowledge is something to be sought by the student rather than something to be brought to him by the teacher; it will utilize the talents and interests of all members of the professional and nonprofessional staff throughout all levels of the program; and it will provide a more competent professional and nonprofessional staff with greater knowledge, skill, and understanding of themselves and students.

Two Main Functions

The thrust will be two-pronged; namely, education and training. The staff of teachers and nonprofessionals will be generalists for the education function and specialists for the training function. In the education function, the maximum freedom and individualization of learning will be ensured. In the training function, the student will become task and skill oriented. Ideally these two functions merge at given points in the program of a student.

STOP-START-STOP...CAPABILITY OF THE CONTINUOUS PROGRESS CENTER
(Based Upon 12-Month School Year Plan)


The Student Enters A New Program
Component A
Component B
Component C
Component D
Component E
Component F
Component G
Component H
Component I...n
Exit
Reentry
Vacation
Reentry
New Program
January? 1-, 2-, 3-Weeks?
New Program
Reentry
Reentry
Exit
Reentry
Vacation or Illness
New Program
May-June?
August-September?
Reentry
New Program
Exit to New Program

(At any point in his program the student may exit to another program--he does not merely go from one component to another component in the same program. He may reenter this same program also.)

PART A

PLANNED ENROLLMENT

Regular and Special Education Students

The planned enrollment in the Middle School will be 1,500 students in the age range 9 through 14, or the present grades 5 through 8. The students will be from the attendance area defined for the Southeast Education Center and will comprise students with all types and degrees of intellectual and physical capacities who do not need institutionalization or highly specialized facilities for their educational and personal well-being. Of these, approximately 3.5 percent, or 50, will be special education students with special needs in the areas of emotional and intellectual handicaps. Students with extreme special needs; for example, those referred to as "orthopedically handicapped," will be accommodated in other Seattle Schools' facilities, except where certain ones of them can be accommodated on an individual basis in the regular programs of the Southeast Education Center schools.

PART B

STUDENT ORGANIZATION

On the basis of an assessment of his characteristics, the student will be assigned to a teacher-counselor who, by virtue of his characteristics, best relates to that student. Each teacher-counselor will supervise up to 25 students in age range 9-14. This individual relationship will normally prevail throughout the time the student is associated with the Middle School. The teacher-counselor will have the primary responsibility for the maximum educational development of those students assigned to him.

Sections of 188-90 Students

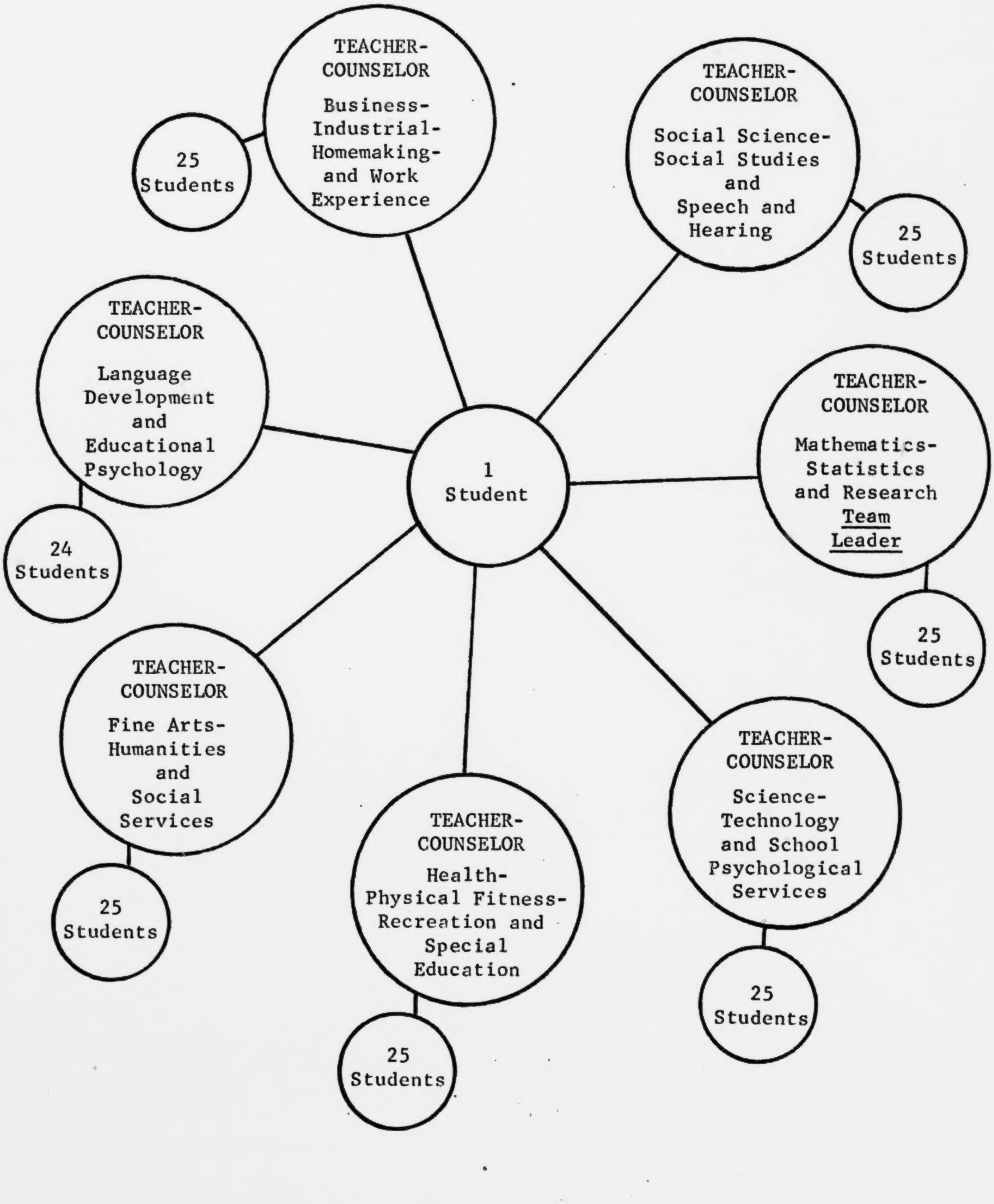
An effective way to organize for individualized instruction within a school is, first, to group students and staff so that each student has a place he can identify with, a "home station"; second, to expose students to a variety of teacher-counselors; third, to form students into small groups with some relationship or commonality among the members; fourth, to form cohesive staff teams which have complementary talents and interests; and, fifth, to assign a teacher-counselor to each of the 25 students.

Thus, in the Middle School there will be eight sections, each of which will be home base for 188-90 students in a nongraded organization from age 9 through 14.

Each of these sections will be staffed with seven teacher-counselors who are educational generalists but who each have one or more strong training specialties which range across the curriculum domains. These seven educators, along with their assistants, will become the staff team most closely associated with a particular student (see chart on following page).

The student will relate to his assigned teacher-counselor for his over-all educational guidance and for perhaps one or two specific subjects. He will relate to the other six teachers primarily for their subject area specialties. They all will confer and cooperate to achieve the maximum development of the student. It is conceivable that the maximum development of an individual student might best be served by selective exposure to individual educators within other sections. If and when this is indicated, the student's schedule will be flexible enough to accommodate that need.

THE RELATIONSHIP OF TEACHER-COUNSELORS TO A SINGLE STUDENT AND TO ALL OTHER STUDENTS


TEACHER-COUNSELOR
Business-Industrial-Homemaking-and Work Experience
25 Students
TEACHER-COUNSELOR
Social Science-Social Studies and Speech and Hearing
25 Students
TEACHER-COUNSELOR
Language Development and Educational Psychology
24 Students
1 Student
TEACHER-COUNSELOR
Mathematics-Statistics and Research
Team Leader
25 Students
TEACHER-COUNSELOR
Fine Arts-Humanities and Social Services
25 Students
TEACHER-COUNSELOR
Health-Physical Fitness-Recreation and Special Education
25 Students
TEACHER-COUNSELOR
Science-Technology and School Psychological Services
25 Students

The chart on the preceding page shows examples of the types of skills the teachers might possess for the training function of the General Learning Area. The combinations could be different and a given teacher may possess more than two or three of these skills. The relationship is two-way between the student and the teachers. Each educator serving as a teacher-counselor (TC) has responsibility for 25 students' programs and progress. The TC with language development and educational psychology skills is the TC with primary responsibility for the student shown here. Each of the 188-90 students in the section has this relationship with the TC's. All TC's have a primary responsibility to 25 students and a secondary responsibility (in the form of learning management over and above program planning) to all 188-90.

PART C

STAFF ORGANIZATION

The Middle School facility will accommodate the administrative component of the Southeast Education Center and the administration and staff personnel of the Middle School.

1. Southeast Education Center Administrative Component

The Southeast Education Center administrative component will consist of the following personnel:

1	Center Director
1	Educational Services Director
1	Business Services Director
1	Community Relations and Information Director
1	Lower Schools Director
3-5	Educational Services and Program Development Specialists
1	Receptionist
2	Executive Secretaries
3	Secretarial-Clerical Employees
3-5	Technicians (Data Analysts, Accountants, etc.)

The Center director and the other administrative officers in the Southeast Education Center are responsible for the over-all services and operations of the instructional units of the Center (secondary school, Middle School, elementary schools, etc.). The Center director is the chief administrator for the entire Southeast Education Center. He will direct the over-all program and will have the authority delegated to him by the superintendent of schools to make decisions regarding personnel and programs and to prepare budgets.

The Educational Services director will coordinate the instructional, curriculum, personnel, pupil personnel, measurement and evaluation, research, and other functions as required by the administrative and instructional staff and units. He will assist in long-range planning and development programs under supervision of the Center director.

The Business Services director will coordinate the long-range fiscal planning, budgeting, programming, accounting, purchasing, engineering, maintenance, and other functions as required by the administrative and instructional staff and units. He will assist in long-range planning and development programs under the supervision of the Center director.

The Community Relations and Information director will coordinate the visits of persons to the Center schools, the requests by external organizations for speakers from the Center staff, press releases by the Center director, requests for information from individuals and organizations outside the Center, and other functions as required by the administrative and instructional staff. His duties will include providing information for staff planning, for community understanding. He will coordinate student visits and help identify on-the-job training opportunities.

The Lower Schools director is the primary administrator for all feeder Lower Schools, and he has responsibilities equal to those of the Middle School and Upper School directors.

It will be the responsibility of the Center director and his administrative staff to provide support in ways relevant to the needs of each instructional unit. Much of this support will be provided by the Educational Services and Program Development Team. This team, composed of from 3 to 5 persons, depending upon the need of the Center, will be responsible for support to the schools through the Educational Services director and may consist of specialists in a variety of areas drawn either from the Center staff or from outside the Center. Their concern is primarily in that part of the program dealing with staff development and curriculum development.

The organization charts on the following pages show the relationships for the entire Southeast Education Center general administrative staff to the instructional units and the organization of each unit of the Center.

2. Middle School Administrative Staff Personnel

The Middle School administrative and staff personnel will include the following professional and nonprofessional persons:

a. Professional

1	Middle School Director
2	Assistant Directors (Education, Business)
60	Educators (Classroom Teachers, Staff Associates)

b. Nonprofessional

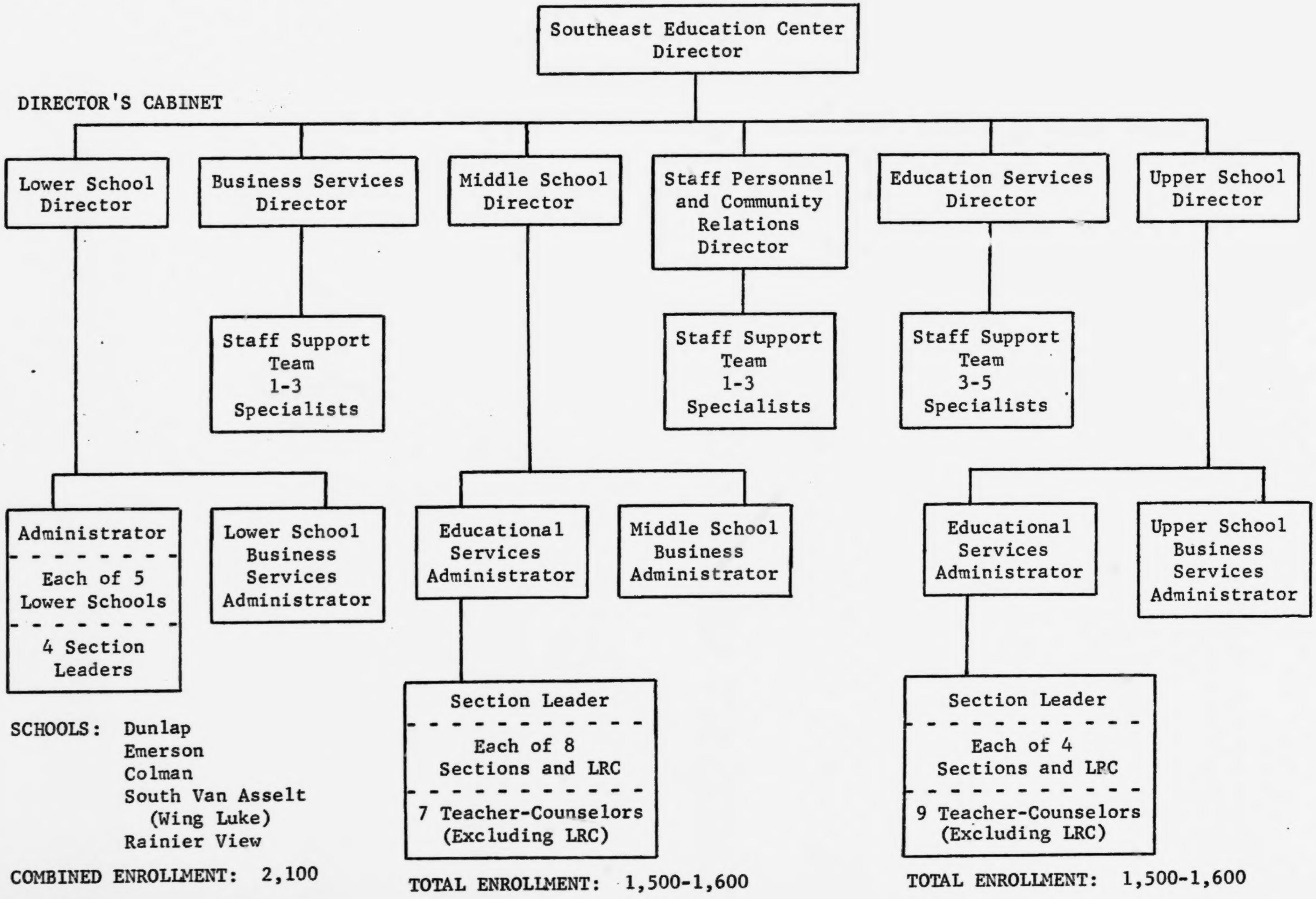
2	Executive Secretaries
14	Clerk-Typists
20	Instructional Aides (full-time or full-time equivalents)

The Middle School director has over-all responsibility for the entire Middle School operation. He will direct his time and efforts to long-range planning programs and growth of the Middle School. He will be concerned with devising the best methods of implementation of educational policies and with personnel decisions within the school.

The director is assisted in his responsibilities by two assistant directors who deal with the day-to-day problems, tasks, and who assist him in long-range planning for the Middle School.

The assistant director for Educational Services will direct his time and efforts to day-to-day problems and tasks occurring within the Middle School educational program. He will work closely with teachers in the learning areas on staff, student, and educational program relationships. He will coordinate the instructional staff, the special learning areas, and administration of the nonprofessional staffing of all educational areas. He will be responsible for the smooth operations of the educational operations.

SOUTHEAST EDUCATION CENTER ORGANIZATION


Southeast Education Center Director
DIRECTOR'S CABINET
Lower School Director
Business Services Director
Middle School Director
Staff Personnel and Community Relations Director
Education Services Director
Upper School Director
Staff Support Team 1-3 Specialists
Staff Support Team 1-3 Specialists
Staff Support Team 3-5 Specialists
Administrator
Each of 5 Lower Schools
4 Section Leaders
Lower School Business Services Administrator
Educational Services Administrator
Middle School Business Administrator
Section Leader
Each of 8 Sections and LRC
7 Teacher-Counselors (Excluding LRC)
Educational Services Administrator
Upper School Business Services Administrator
Section Leader
Each of 4 Sections and LRC
9 Teacher-Counselors (Excluding LRC)

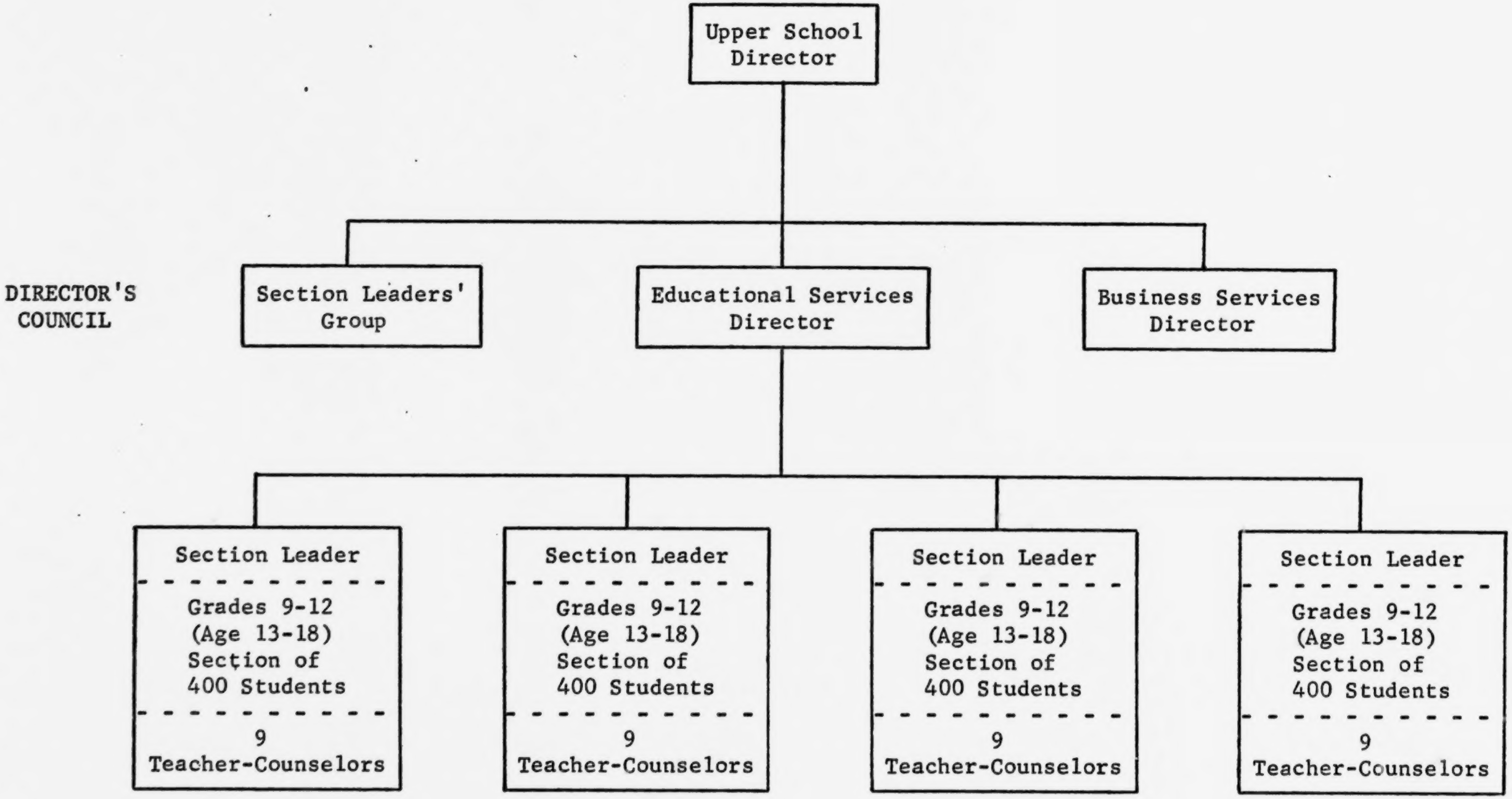
SCHOOLS: Dunlap
Emerson
Colman
South Van Asselt
(Wing Luke)
Rainier View

COMBINED ENROLLMENT: 2,100

TOTAL ENROLLMENT: 1,500-1,600

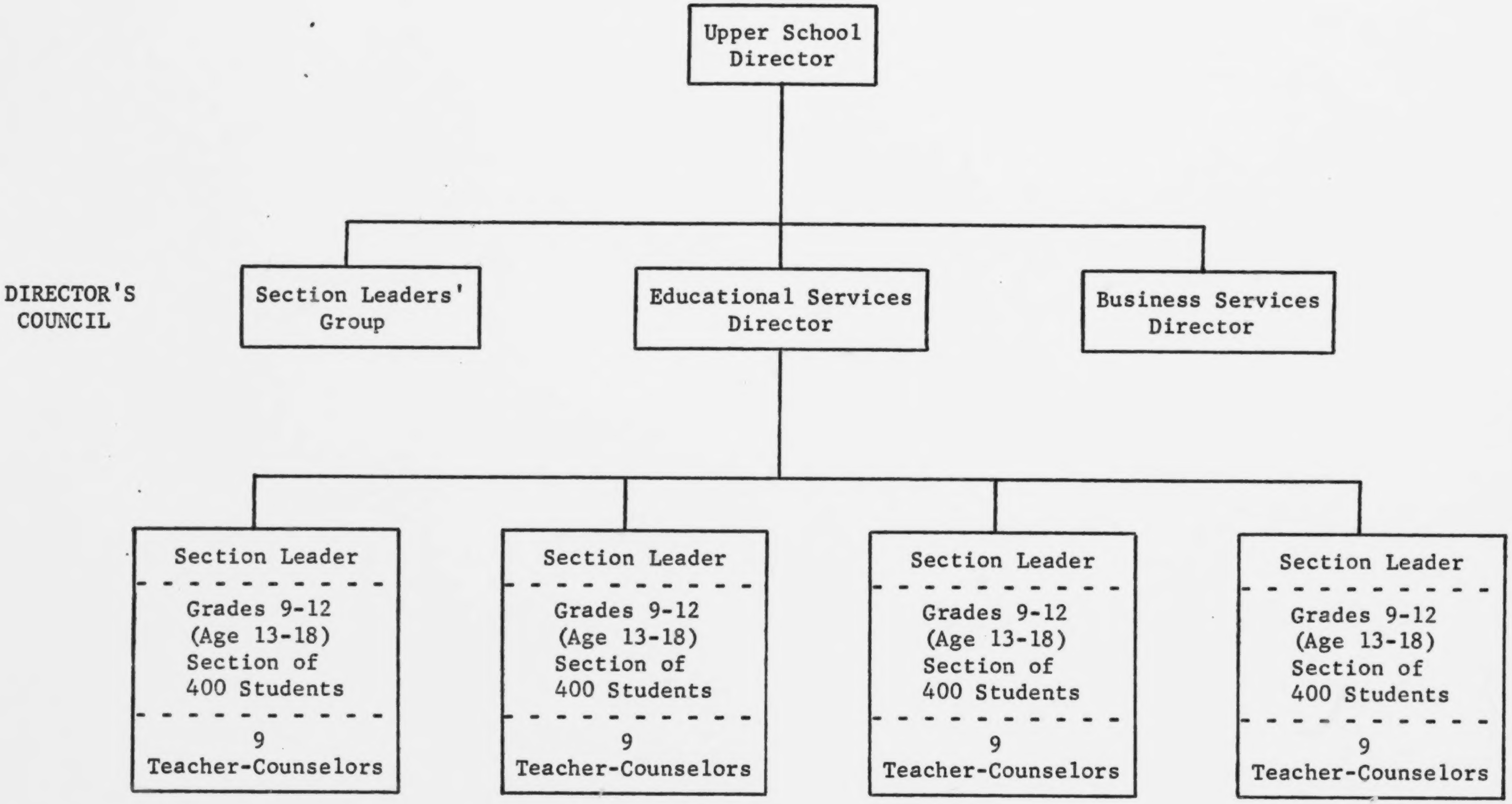
TOTAL ENROLLMENT: 1,500-1,600

UPPER SCHOOL ORGANIZATION


Upper School Director
DIRECTOR'S COUNCIL
Section Leaders' Group
Educational Services Director
Business Services Director
Section Leader
Grades 9-12 (Age 13-18) Section of 400 Students
9 Teacher-Counselors
Section Leader
Grades 9-12 (Age 13-18) Section of 400 Students
9 Teacher-Counselors
Section Leader
Grades 9-12 (Age 13-18) Section of 400 Students
9 Teacher-Counselors
Section Leader
Grades 9-12 (Age 13-18) Section of 400 Students
9 Teacher-Counselors

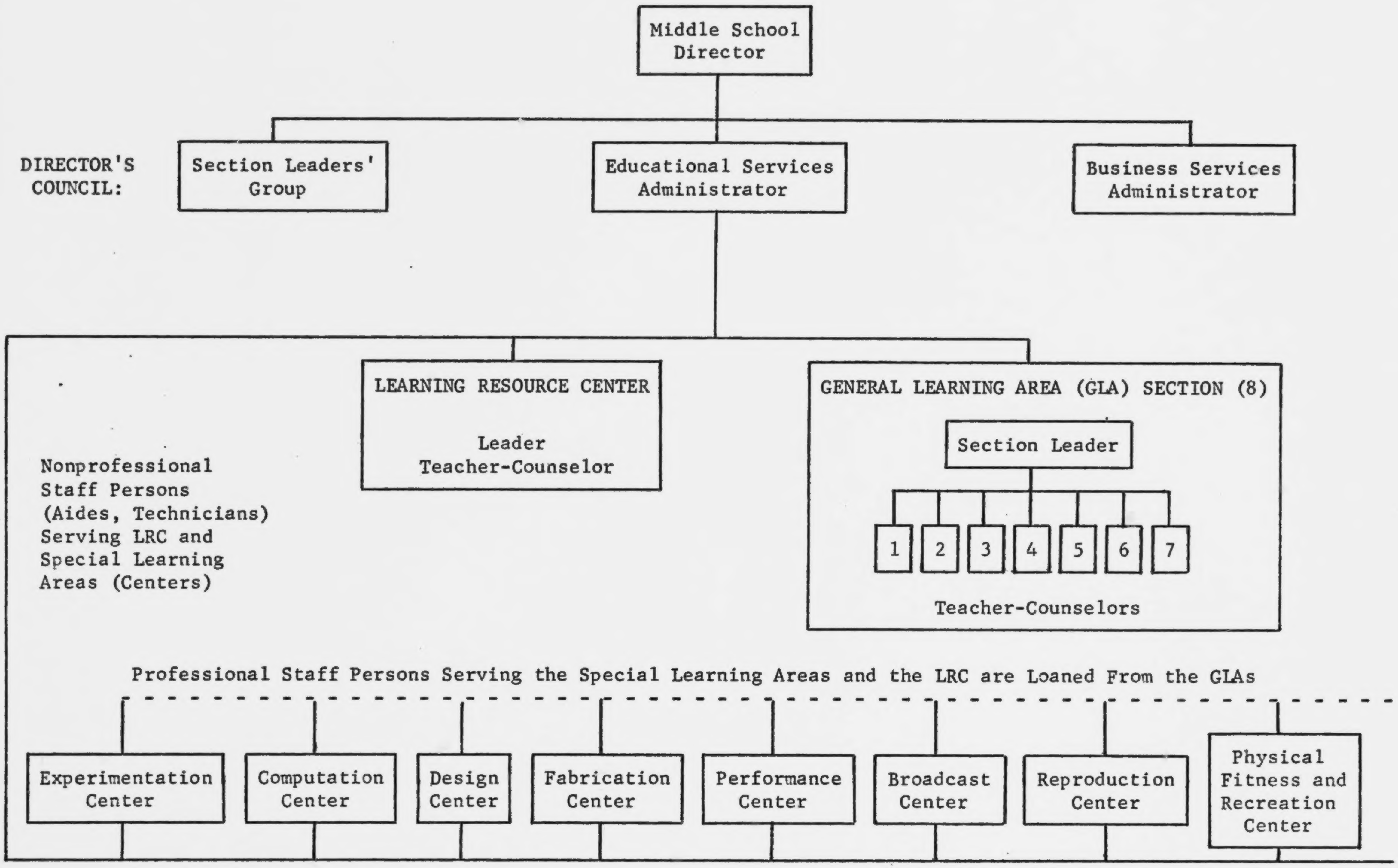
Serving these sections will be the same types and degrees of specialized learning areas and centers as are described in the Middle School Specifications. The main focus in the Upper School is specialization and the primary learning strategy is independent study on programs contracted and developed by the student himself.

UPPER SCHOOL ORGANIZATION

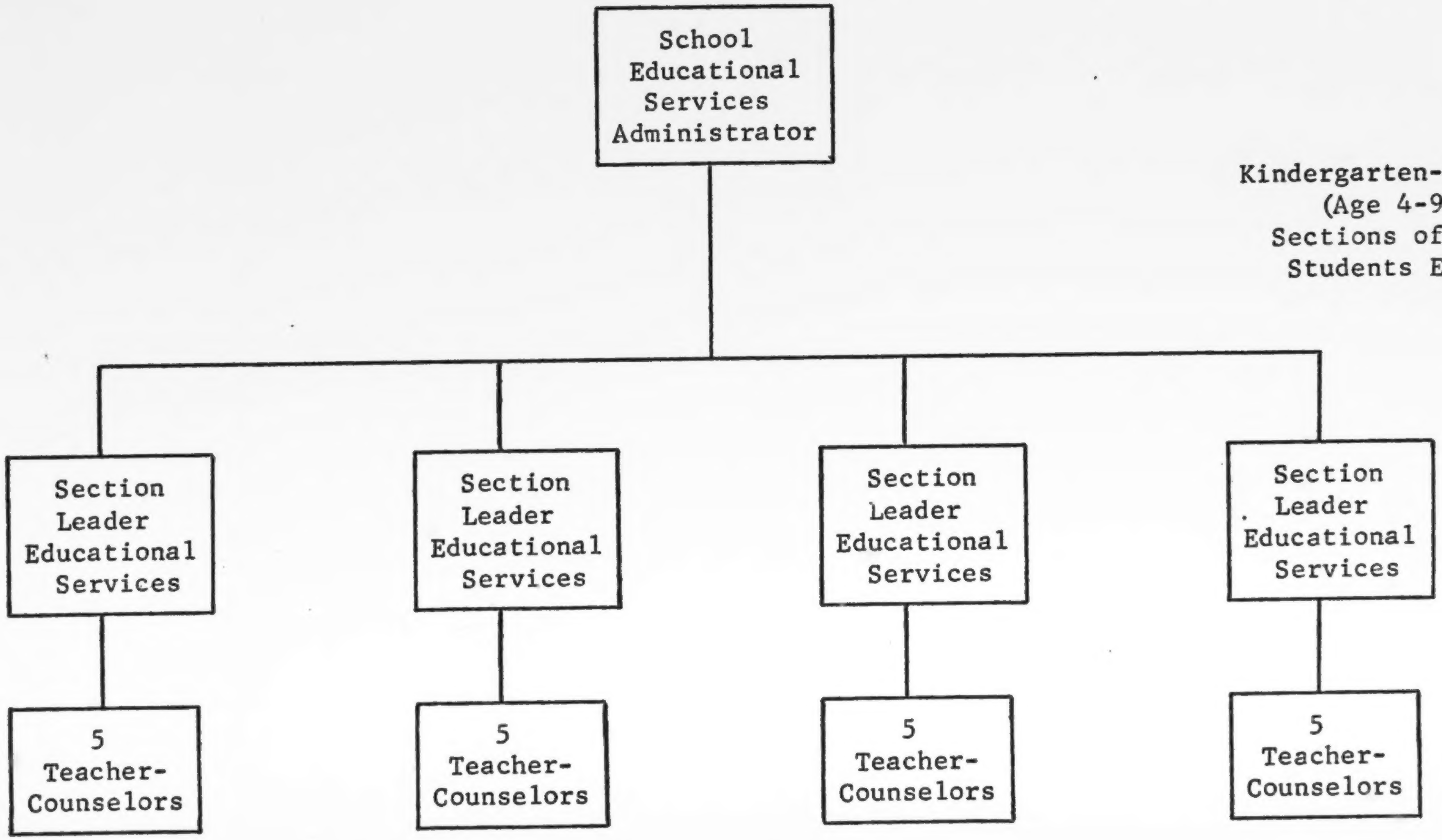

Upper School Director
DIRECTOR'S COUNCIL
Section Leaders' Group
Educational Services Director
Business Services Director
Section Leader
Grades 9-12 (Age 13-18) Section of 400 Students
9 Teacher-Counselors
Section Leader
Grades 9-12 (Age 13-18) Section of 400 Students
9 Teacher-Counselors
Section Leader
Grades 9-12 (Age 13-18) Section of 400 Students
9 Teacher-Counselors
Section Leader
Grades 9-12 (Age 13-18) Section of 400 Students
9 Teacher-Counselors

Serving these sections will be the same types and degrees of specialized learning areas and centers as are described in the Middle School Specifications. The main focus in the Upper School is specialization and the primary learning strategy is independent study on programs contracted and developed by the student himself.

MIDDLE SCHOOL ORGANIZATION


Middle School Director
DIRECTOR'S COUNCIL:
Section Leaders' Group
Educational Services Administrator
Business Services Administrator
LEARNING RESOURCE CENTER
Leader
Teacher-Counselor
GENERAL LEARNING AREA (GLA) SECTION (8)
Section Leader
1
2
3
4
5
6
7
Teacher-Counselors
Nonprofessional Staff Persons (Aides, Technicians) Serving LRC and Special Learning Areas (Centers)
Professional Staff Persons Serving the Special Learning Areas and the LRC are Loaned From the GLAs
Experimentation Center
Computation Center
Design Center
Fabrication Center
Performance Center
Broadcast Center
Reproduction Center
Physical Fitness and Recreation Center

LOWER SCHOOL ORGANIZATION


School Educational Services Administrator
Section Leader Educational Services
Section Leader Educational Services
Section Leader Educational Services
Section Leader Educational Services
5 Teacher-Counselors
5 Teacher-Counselors
5 Teacher-Counselors
5 Teacher-Counselors

Kindergarten-Grade 4
(Age 4-9)
Sections of 125
Students Each

NOTE: The ratio of teacher-counselors to students at this level should be 1:20-25. Their training and experience, inclination, interest, and capacity should be toward and with students needing inspiration in all program activities and toward precise, well-considered reinforcements of learning and of trends developing within each student's behavior.

The assistant director for Business Services will direct his time and efforts to the day-to-day administration of business services and plant operations of the Middle School. He will work closely with custodians, maintenance personnel, food services personnel, office personnel, and others serving these functions. He is responsible for the smooth operation of the facility and business functions of the Middle School.

The professional staff includes teachers and/or staff associates in a ratio of one educator for every twenty-five students. With the Middle School divided into eight General Learning Area sections, the distribution of educators per section of approximately 190 students includes approximately:

1 Consultant Teacher-Counselor
3 Continuing Teacher-Counselors
3 Beginning Teacher-Counselors

These categories are based upon the Statement of Standards for Preparation of School Professional Personnel Leading to Certification, State of Washington, Fourth Draft, April, 1968. Each teacher's responsibility (spelled out in detail in a later section) is primarily that of one teacher-counselor to approximately 25 students whose programs are under constant surveillance.

Nonprofessional Staff and Community Resources Persons

The nonprofessional staff includes aides and clerk-typists. The aides are either full-time or are full-time equivalents and are in a ratio to teachers of 1:3. Their functions in the Middle School and in the Center are to relieve the teacher of, or assist him with, the tasks which support the relationship between the teacher and the student; for example, record keeping, typing, movement of books, materials, supplies, etc. At the discretion of the teacher, and commensurate with the needs of the student, some tutoring may be done by the aide. At times persons living and/or working in the community will have an expertise that will be used in the program by hiring them on a "visiting educator" basis, e.g., seminar discussion for a day, videotaped talk, technical backup on curriculum development, etc. This means that persons in the community who would like to teach now and then in an area they know well will be resources in the education and training functions and will be used as such. The administrative control of the aides when they serve in the specialized centers will be with the assistant director for Educational Services.

The clerk-typists are full-time and are in a ratio to teachers of 1:5. They will work closely with the aides in record keeping, typing, filing, and the clerical tasks in each general learning section. Most of their activities will be supervised directly by the aides and indirectly by the teachers.

Student assistants will provide tutorial, clerical, and service help in the program. Their individual education and training programs will direct such help on the part of the students in the learning areas and in the administrative and service areas. They will serve as clerk-typists, record clerks, student technicians, tutors, receptionists, tour guides, etc.

The Middle School director will be served by an executive secretary. Another executive secretary will serve the two assistant directors. In addition, two clerk-typists will serve in the administrative area.

The complete organization chart for the Middle School, shown earlier, reveals that the Learning Resources Center is staffed by a full-time specialist. It shows that each general learning section is led by a lead teacher. Other learning areas in the school include specialized centers for such activities as experimentation (science, social sciences, etc.), computation, design, fabrication (construction), performance, broadcasting, reproduction, and physical education. None of these will require full-time professional staff persons, but all will be supervised by teachers assigned from the General Learning Area sections.

Chapter 3

CURRICULUM AND PROGRAM

PART A

THE STUDENTS

The entire organization of the Southeast Education Center is focused upon the developing characteristics of the individual student. His natural path of learning from chronological age 4 through age 18 follows a definite trend. The educational program and curriculum will organize around that trend.

By the time the student has reached the Middle School he will have progressed intellectually, emotionally, and physically to the point where he responds more rationally to the tasks before him. He will be much more aware of his own interests and capacities and weaknesses. He will be more discriminating and more aware of how he differs from other students. Whereas he once responded to the emotional aspects of the situations, events, processes, and objects; for example, color, texture, and materials, he will now respond more to the meaning of such situations and objects. More of his time will now be spent analyzing situations. Time must be made available for this kind of response, more than in the past when his attention span was much shorter.

The student will order his world more in terms of cause-and-effect relationships. He will be ready to take on his tasks at differentiated paces, depths, degrees, and be able to set priorities and make those value judgments leading to specialization that he could not make before.

The student during the period of time from ages 9 through 11 will not have made this transition as well as he will by the age 12 to 14. For this reason in the formal instructional setting he will still require some close supervision. The educational program for the student of ages 11 through 14 will allow much more opportunity for him to make his own decisions since it is in this way that he will learn to create hypotheses and deduce conclusions which will lead ultimately to practical solutions to problems which he faces.

Thus, in the Middle School the student will still have the freedom to expose himself to the broad curriculum, but he will also have the opportunity for longer, more intensive involvement at any one time in his projects and in his learnings. Close supervision by educators will still be a vital part of the program to ensure that the formal operations of hypothesis developing and testing by the student are based more often on correct than incorrect propositions.

Multivariate Behavioral Classification of Students

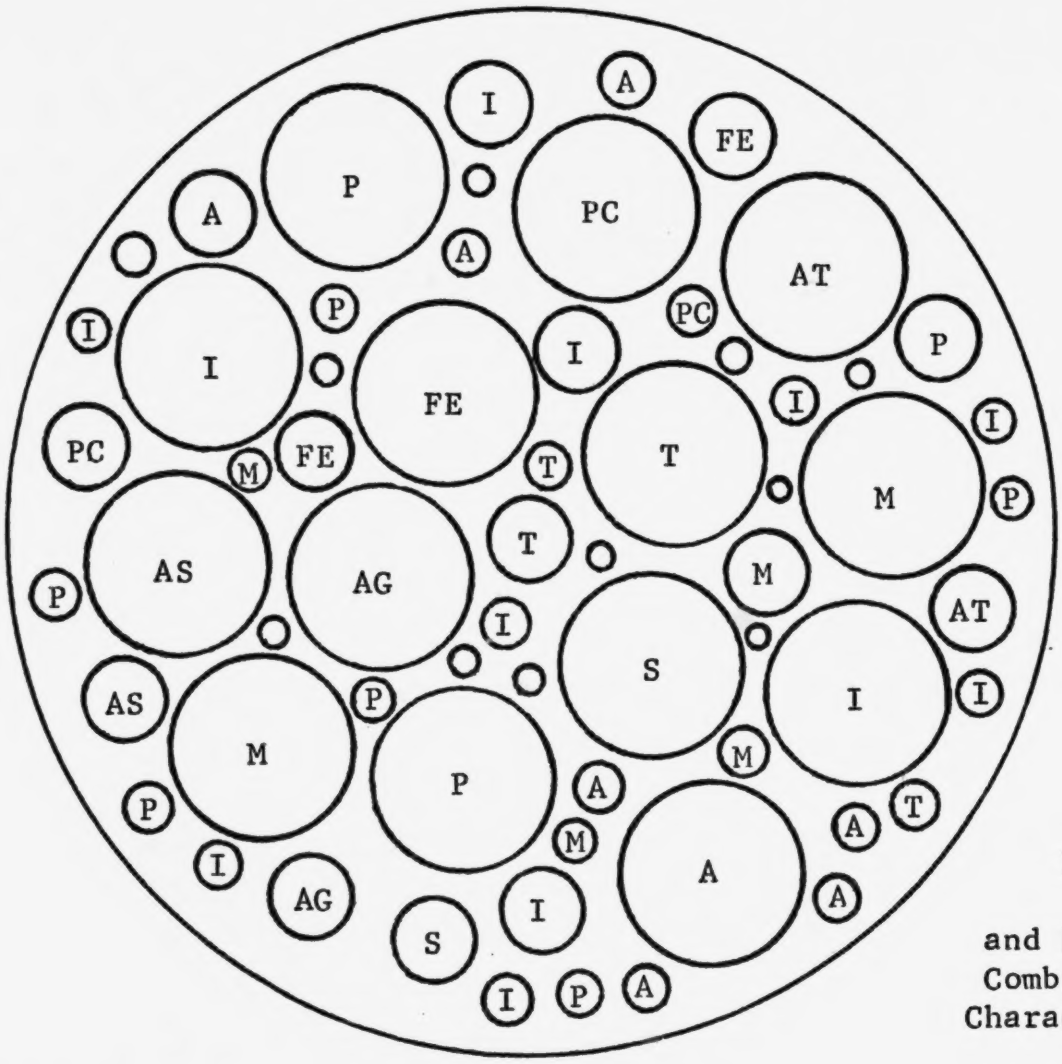
The table on the following page is an example of one way a student can be classified by his teacher-counselor. This classification will lead to more efficient programming of students, because it will help the teacher to prescribe appropriate curricula, learning tools, and associations with other teacher-counselors. For example, one student with "high" aptitude, interest,

AN EXAMPLE OF A TABLE WHICH MIGHT BE USED TO ORGANIZE A STUDENT'S CHARACTERISTICS FOR THE PURPOSE OF PROGRAM PLANNING AND CURRICULUM DEVELOPMENT FOR THE STUDENT

Rating and Percentile	* I	A	M	T	AT	PC	FE	AS	P	AG	S
Very High 98+											
High 94-97											
Above Average 85-93											
High Average 70-84											
Average 31-69											
Low Average 16-30											
Below Average 7-15											
Low 3-6											
Very Low 2 and Below											

* Columnar letters stand for the student's characteristics. On the following page is the list of those characteristics. In no sense is this list complete and comprehensive--the characteristics are infinite in type and degree.

AN EXAMPLE OF THE MULTIVARIATE BEHAVIORAL CHARACTERISTICS OF ONE STUDENT AT A GIVEN POINT IN TIME



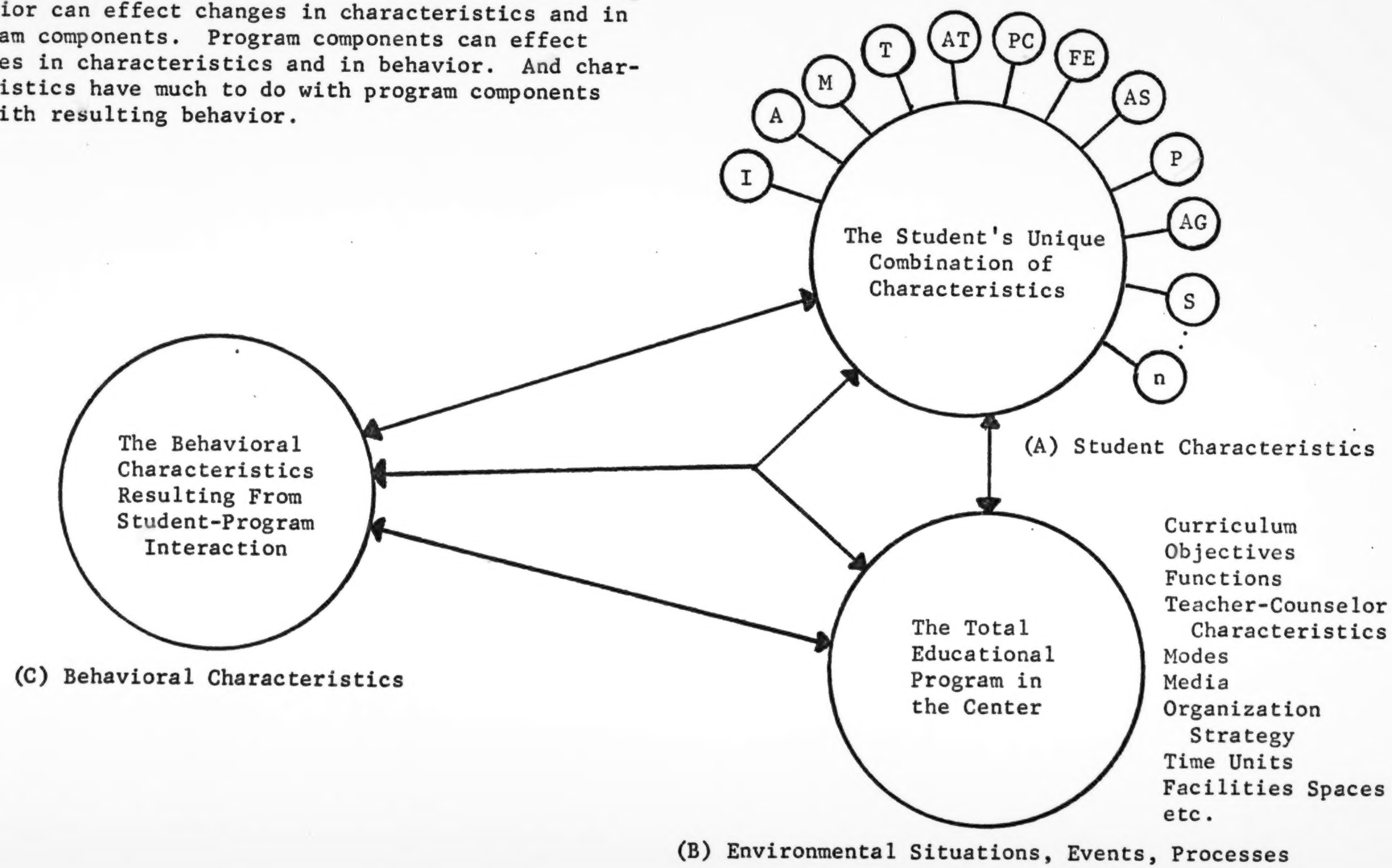
The
Individual
Student
and His Unique
Combination of
Characteristics

At any given point in time the individual student is comprised of many and diverse characteristics. Those characteristics exist for the student in the form of interacting behavioral factors. Identification of the needs of the student would consist of measures taken of the degree to which those factors are interacting, as well as of the degree to which each factor contributes to the overall behavior of the student. In the diagram above, each of the circles represents what might be the various weights of each of those factors. Large circles represent large weights. Smaller circles represent varying degrees of weights according to the characteristic or factor. The letters used stand for the following factors:

I	Interest characteristics or factors
A	Aptitude characteristics or factors
M	Mastery-Achievement characteristics or factors
T	Temperament characteristics or factors
AT	Attitude characteristics or factors
PC	Physical Capacity-Phenotype characteristics or factors
FE	Family Expectations
AS	Aspirations of the Student (Motivational characteristics or factors)
P	Personality Needs--Traits
AG	Age characteristics or factors (age-related)
S	Sex characteristics or factors (sex-related)

AN EXAMPLE OF THE INTERRELATIONSHIPS AND INTERACTIONS AMONG STUDENT CHARACTERISTICS, PROGRAM COMPONENTS, AND RESULTING BEHAVIOR

The interactions are mutual and reversible. Resulting behavior can effect changes in characteristics and in program components. Program components can effect changes in characteristics and in behavior. And characteristics have much to do with program components and with resulting behavior.


I
A
M
T
AT
PC
FE
AS
P
AG
S
n
The Student's Unique Combination of Characteristics
(A) Student Characteristics
The Behavioral Characteristics Resulting From Student-Program Interaction
(C) Behavioral Characteristics
The Total Educational Program in the Center
Curriculum
Objectives
Functions
Teacher-Counselor Characteristics
Modes
Media
Organization Strategy
Time Units
Facilities Spaces
etc.
(B) Environmental Situations, Events, Processes

and personality orientation in a given subject may need less exposure to that subject than would another student.

He may stay in the subject, on the other hand, because he is able to use his time to learn in other subjects which have some relationship to the first subject. In the process of programming the student, the teacher-counselors will gain three insights--first, primary benefits to be derived from the exposure; second, secondary benefits to be derived from the exposure; and, third, other learnings which can occur during the exposure.

All schools, as well as the Middle School, will stress identification of student characteristics and upon establishing relationships between those characteristics and programs. The on-site stored program, digital computer system will be useful in its "computer-aided educational management" (CAEM) function when used to do multiple regression analyses, canonical correlation analyses, and factor analyses of those characteristics and program components. This will lead to continuous evaluation of the relationships between the student's characteristics and his program.

Characteristics of Students

The types of aptitudes among the students, which the program will focus upon are: Mechanical reasoning, spatial perception, fine and gross dexterity, clerical speed and accuracy, verbal reasoning, quantitative reasoning, numerical computation ability, abstract reasoning, musical appreciation and production, artistic appreciation and production, divergent thinking and production, convergent thinking and production, etc. Each of these can be measured with standardized instruments, but each of them is a composite of many behaviors. The research function in program development will focus upon identifying those behaviors and relating them to learning strategies.

The types of interests among the students which the program will focus upon are: adventure, agriculture, art, business management, law and politics, mathematics, mechanical, medical service, merchandising and marketing, leadership, music, natural science, office practices, public speaking, recreational leadership, sales, sciences, social sciences, social service, teaching, technical supervision, writing, etc., and combinations of these.

Attitudes, temperament traits, needs, etc., will run the gamut, and although they are significant to program planning, the intent will be to accept them as they are and use them in program planning. If the student is one who likes to work undisturbed and relatively unnoticed for long periods of time and is organized in his work, the staff will allow him as much freedom as required. The student who is outgoing and likes to participate in a variety of activities or who needs more attention will be programmed accordingly so long as the program relates to the student's potential and to the primary school functions of education and training in the basic curriculum domains and career development.

The staff will urge the student to become self-reliant rather than dependent upon the educator. Those students who cannot set their own paces and work without the continuous reassurance of the staff will present one of the greatest challenges to the staff. To the extent necessary, these students will be supported but without constant supervision.

Student Involvement in Program Planning and Curriculum Development

The student, himself, will be able to assist the teacher-counselor in program planning. He also will be able to help prepare or organize his curriculum materials. As a student develops his programmed unit in a subject, he not only learns about that subject but also helps provide the school with additional curriculum materials. The student who develops his own criterion-based mastery tests and prepares the answers he would provide for that test is actually revealing to the teacher-counselor the kinds of things he intends to do, is aware of, or feels are important to him. He thus is learning as well as helping the teacher-counselor and the school program. The more the student is allowed such participation, and the more the curriculum materials are developed in this fashion, then the more the teacher-counselor will have time and energy to manage the learning process and make progress in his own needs.

In the present system of working with the individual student, a measure is taken of his achievement in a variety of subject areas. We interpret the results in terms of his percentile standing on the measures, and we then prescribe more of the same. This assumes that what we are measuring is the thing that is good for the student. No matter what his standing is, he will usually be grouped with all other students in the same lecture-demonstration-"discussion" situation for the same period of the day for the same amount of time with the same educator or educators, and he will not learn any less or any more for all of the time and energy expended by the human and the static resources of the school.

The Southeast Education Center will direct the attention of the staff to changing this procedure. This will be discussed more fully in later sections, but it will consist basically of a focus upon the real characteristics of the individual student. It will, hopefully, remove a lot of the guesswork involved in the present program about students and their programs. It will prescribe different programs, criterion measures, and follow-on for one student as compared with another student.

Students With Special Needs: Special Education

The program will be designed to meet the special needs of those students with intellectual, emotional, and other special disabilities.

The student who is intellectually impaired (mentally retarded) will participate with other students in the school to as large a degree as possible. He may, for part of his program, be in a self-contained classroom with other students in a general learning section. However, this student's program also will be individualized. His teacher-counselor will be a specialist in the learning needs of such a student, and the section he is assigned to will be comprised of staff and student personnel who will help him in his special needs.

Student help will be available in this instructional function as elsewhere. This will afford training, education, and experience for these students in tutoring, as well as in working with other students of diverse characteristics.

The program of the intellectually impaired student may involve more physical and manual activities than most students, but also it will include appropriate academic studies.

Intensive treatment techniques, such as operant conditioning, often are very helpful to this student. These techniques are useful in training the student in self-control and in capturing his attention by focusing it upon critical events and processes.

He will associate with the other students not only for the help they can give him but also for the experiences he will provide them in their learning about society and the individual. One of the most important objectives of the program is that of having a variety of students work together for the good of all of them.

Art, music, basic education in academic subjects, physical education, fabrication, and design are appropriate for this student, but his needs and characteristics will suggest his program as they will with all other students.

The student receiving professional treatment for emotional problems will find a school staff, more than ever before, working to support as much as possible the professional recommendations. The staff will work together both on referrals to professionals and on implementation of programs. Professional counsel will be sought by the school on behalf of the student when counsel will increase staff effectiveness with the student. At all times, the staff will consult with, and respect the opinions of, the student's parents or legal guardians.

The needs of the student with special difficulties, such as "dyslexia," will be recognized, and he will be specially programmed. If the student already is receiving outside professional services, then the staff will provide supporting programs.

In cases where the student is out of school for prolonged illness, or for intensive treatment, he will be programmed for home study. After returning to school, the student's program may start where he left off, return to an earlier program, jump ahead, or move to a new and different program. The "stop-start" capability of individually prescribed instruction will make such programs possible. He is a flexible, potentially creative student who, for the most part, can be self-directing. At the age when life qualities are becoming fixed, the Middle School program will place great emphasis on the needs of the student. A later section states in greater detail what the individualized program will include.

The next section describes the role of the teacher-counselor in this type of program.

PART B

THE TEACHER-COUNSELOR

This person is a key staff person at all levels in the Southeast Education Center. He is a person who, depending upon the needs of the Center students, may serve either or both as a "classroom teacher" or a staff specialist with training in education, psychology, measurement and evaluation, and counseling. The professional improvement program of the center will focus upon merging the skills of a variety of specialists (classroom teachers, educational psychologists, school psychologists, educational social workers, educational counselors) into the one person, the teacher-counselor.

In the team context, the teacher-counselor is an individual who brings to the team certain unique skills and knowledges which complement those of other members of the team. All members of the team will be able to deal with the education functions of the program. These are functions which pertain directly to learning. They require that the teacher-counselor know well the theory and practice of learning, possess the skill and inclination to motivate and inspire learning, and understand how children naturally develop in their learnings. It is through effective application of this professional knowledge that the student's creativity will be nurtured and increased. The teacher-counselor must become a training specialist, able to deal with the training function of the program. It is in this function that the educator's unique skills, knowledges, and understandings strengthen the team. In this function the differences among the curriculum areas become most apparent, even though most of their contents are integrated and unified together with all other domains.

At all levels, the focus will be upon the needs of the individual student. The main strength of the effective teacher-counselor is his orientation to those needs. The teacher-counselor should meet these needs with a minimum of effort and a maximum of success for the student. This means that the philosophy of continuous progress, individualized learning, and independent study must guide all persons within the Center.

The Teacher and the Nonprofessional Staff

Relaxed and comfortable relationships between the teacher-counselor and his or her individual students must occur. The teacher-counselor, therefore, will need to be relieved of many routine tasks to maintain effective counseling relationships. These may include record keeping; typing; movement of books, materials, equipment, and so forth. Assistance will be provided by instructional aides and clerk-typists under the direction of the teacher-counselor. In the Middle School the ratio of aides to teacher-counselors will be 1:3, and of clerk-typists to teacher-counselors will be 1:5. These may be full-time aides and clerk-typists or they may be full-time equivalents (FTE), that is, a combination of part-time persons whose total working time totals up to that of full-time person.

The Teacher As a Resource Through All Levels of the Center

The special talents of the teacher-counselor will be utilized at all levels and divisions of the Center. His main function may be with students at one level; for example, the K-4 school, but he may also contribute from his special skills and knowledges to the learnings of students in the 9-12 division. Likewise, the teacher-counselor whose principal service is in the 9-12 division may be of service on some occasions in the K-4 division. Nevertheless, teachers will be carefully selected and assigned to levels and teams because of their special skills which are as much psychological, special education, and so forth, as they are subject matter and curriculum content skills, knowledges, and conceptualizations. Again, this restates what has been described previously as the teacher-counselor bringing to the team certain unique skills and knowledges to complement the other members of the team.

Specialized Professional Assistance

In the present school system the needs for specialized help are met by itinerant specialists (psychologists, social workers, speech and hearing therapists), all of whom are on the central staff. In the Middle School this specialized assistance will be provided by placing such specialists within the learning areas of the school as members of the team of teacher-counselors. However, intensive social service, psychological therapy, personal counseling, and other more intensive treatment services should be provided by professionals outside the Center staff. Consultations about additional outside-the-center services will be shared by staff and parents or legal guardians of the individual student needing such service.

When the team consists of seven educators, members of the team may include staff associates as well as, or in addition to, subject matter specialists. The number of members of any given team in the Center and in the Middle School will remain at about seven regardless of the type of specialty of each member. Carefully structured curriculum materials and the individual emphasis of the program will make independent study possible without extensive tutoring or assistance from team specialists.

Functions of the Teacher-Counselor

The teacher-counselor will initiate and maintain the conditions for effective, positive learning and a climate or atmosphere of inspiration for the learner. At the same time he will carry out program responsibilities, such as the following:

First, he will assess the characteristics of the student and diagnose his learning needs.

Second, he will develop and organize with the student a program based upon those characteristics and needs.

Third, he will interact with and counsel the student on his program.

Fourth, he will evaluate the effectiveness of the program and of the student's progress within it.

Fifth, he will work with other staff members in program development.

Sixth, he will consult with other members of his team about students.

Seventh, he will communicate with the parents or guardians of the students.

Eighth, he will instruct the student in his area of specialty.

The chart on the following page is an estimate of the types of activities the teacher-counselor might engage in and the amount of time he might devote to them.

The Southeast Education Center schools will direct the teacher-counselor's attention to the individual student and reassure him progress is being made in his efforts. Proof of progress will come from the research and development analyses of the ongoing program.

Such analyses will show that students can direct much of their own education and training and that when they falter the person most able to help them will be the teacher-counselor.

Such analyses will show that learning cannot be compartmentalized and that curriculum domains and subjects cannot be separated by permanent barriers of time, focus, media, or space.

Such analyses will show that the characteristics of a student are significant for learning and must be recognized in programming. Programs and measures of progress in those programs will be shown to be criteria-based and relevant to those characteristics.

Such analyses will show that there is no hierarchy of knowledges, skills, and conceptualizations that follow the same spiral for every student; some students may reverse the spiral and still learn the material to the same degree as the next student.

Such analyses will show that the school education and training functions make the place of the formal public primary school firm and secure as a major force in society.

The key to all these, however, is the degree to which the teacher-counselor will focus upon the individual student. The 25 students he advises and counsels are his responsibility because of certain needs they have which he can perhaps meet better than another, or because he is a member of a team which has relevancy for those students. Their programs and their progress are his concerns as he goes about his daily duties. These students are the ones he seeks to inspire through the program and aid in their pursuit of independent learning. The most important contacts the teacher-counselor will make in his work are with the individual student and the student's parents or his legal guardians. To a far greater degree than ever before, this will place highly professional responsibilities upon the teacher. Not only will he grapple with questions of what is to be taught but how it should be taught to a particular individual student. He will be responsible not only for the preparation and application of programs but for the evaluation of the effectiveness of his efforts.

In opening up the greater possibility of highly professional output, the School District policies and regulations must permit sufficient latitude for Center administrators and staff to make decisions about the budget, program, and

TEACHER-COUNSELOR ACTIVITIES AS PERCENT OF TOTAL TIME

(Based Upon the Average Student Two Years Into the Program at a Given Point in Time)

Time	Activity
25	Counseling 25 students Analyzing records Communication to home
5	Large group instruction
25	Small group instruction Small group interaction Small group leadership
15	Individual (1 to 1) assistance in subject areas at carrels
15	Individual (1 to 1) assistance in specialized centers or LRC
10	Curriculum planning and alteration; Teacher interaction (between schools); Faculty councils, etc.
5	Interaction with other teacher-counselors about students

100

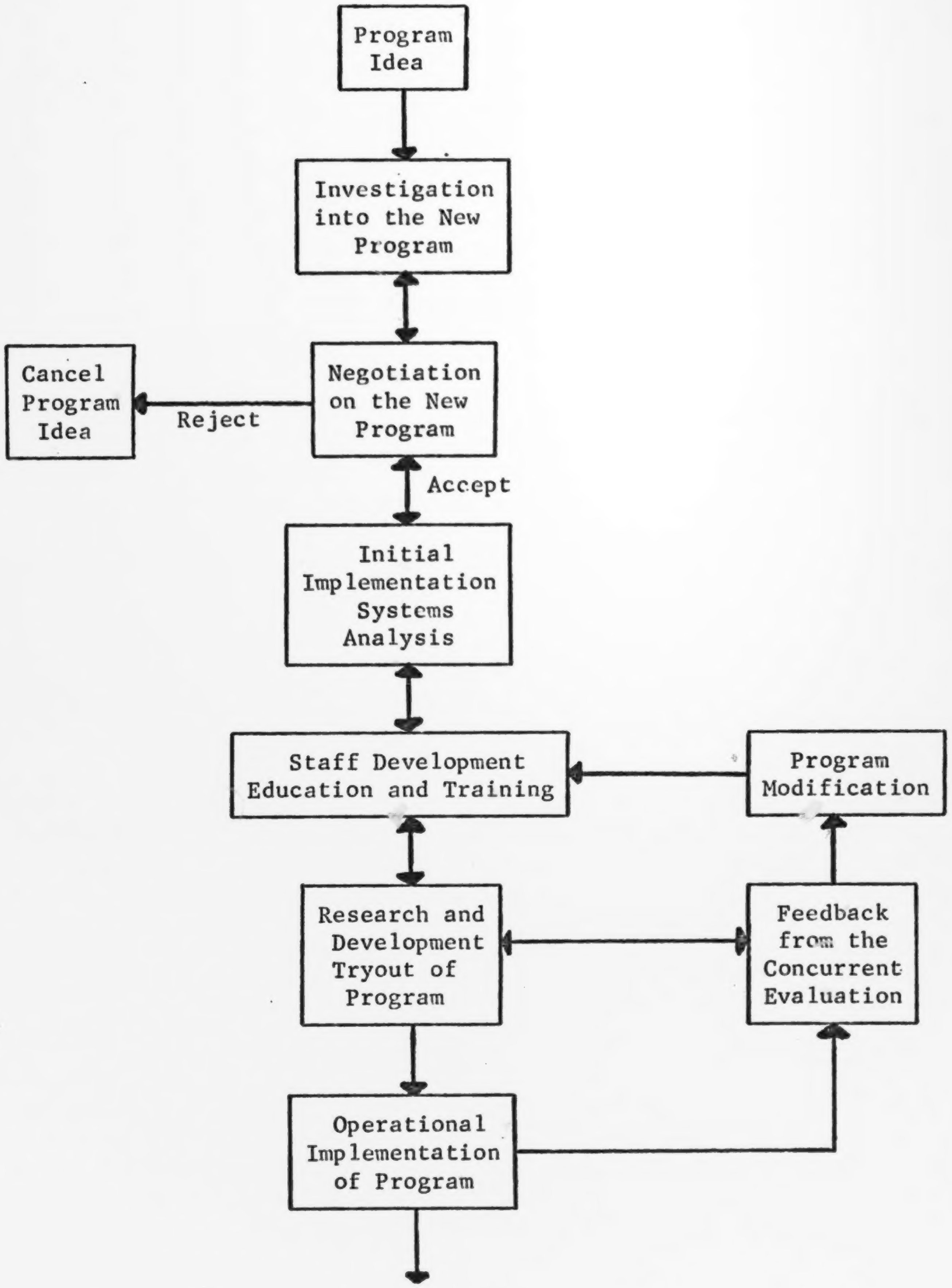
students.

The District must help provide appropriate on-site staff development programs to help the teacher-counselor learn and become comfortable in his new roles. The teacher-counselor can become effective only if schedules are flexible for both his team and individual assignments and if he is relieved or assisted in the many nonprofessional duties.

The District must foster and maintain a working relationship with the outside professional community so that referrals of students by the teacher-counselors, working along with parents or legal guardians, are facilitated and so that the implementation of the education and training aspects of intensive treatment is possible.

Finally, the teacher-counselor must not be faced with strange, new programs which have been developed and made ready for incorporation into the program without his involvement in that program development or in staff development training and education in that program. Program development activities, such as those described in this document, will be preceded by staff orientation experiences. These training events will be the most significant aspects of the Southeast Education Center for the staff.

PROGRAM DEVELOPMENT SEQUENCE


Program Idea
Investigation into the New Program
Cancel Program Idea
Reject
Negotiation on the New Program
Accept
Initial Implementation Systems Analysis
Staff Development Education and Training
Program Modification
Research and Development Tryout of Program
Feedback from the Concurrent Evaluation
Operational Implementation of Program

PART C

THE INDIVIDUALIZED CURRICULUM

The Single, Universal Objective of the School

In the Southeast Education Center, and in all of its units, there is a permanent curriculum. It is based upon a universal goal and objective of formal learning, and of learning in general. It is that which is written and organized to help students learn the how (the process) of problem solving in the psychological, social, and biological-physical environments. This includes the cognitive and affective factual knowledges, conceptualizations, and intellectual-visual-motor skills with which problem solving is accomplished and which may change, in content but not in intent, from time to time. This problem solving is not necessarily "problem" oriented in the sense that the individual student is having problems. It is what has been called rational thinking and inductive-deductive reasoning. The student must be helped in his need to solve the general problems he will face in the careers and personal situations which he will face from generation to generation.

In solving his problems and in accomplishing his tasks, the student will either have or will know how to acquire basic learnings. These include knowledges, conceptualizations, and skills. Before the student can solve the problem, he must know the problem. Before the student can apply appropriate skills to the problem, he must conceptualize all aspects of it. And, finally, he must have initiated, reinforced, and maintained certain aspects of those skills. At times the student will not have certain of those basic learnings when he needs them, and he will not want to acquire them. The curriculum program and the teacher-counselor have the responsibility of inspiring the student to motivate himself toward the basic learnings and around conflicts.

The greatest challenge, then, will be that of discovering the means to inspire and motivate the student to want to pursue his needs, and, when necessary, to shape him into a learner.

The program of individualizing the curriculum will set the contingencies for such inspiration and motivation for each individual. The student will shape himself into a person who more and more pursues independent study. The teacher-counselor will be responsible for helping the student to identify and follow through on those characteristics which lead him to that objective. The ultimate discovery will be of the intrinsic motivators to which the student will respond in his basic learnings and in his problem solving. His education and training program will evolve as he and the teachers interact, and the curriculum development will more or less follow along with that interaction.

Inspiration of the Student

The environments of the universe and space, the sea, the earth above sea, the human group, and himself constitute the sources of the student's problems and tasks. Yet there remains more mystery about these than understanding. We are as much in the business of creating sensitivity towards environments and their mysteries as we are in constructing knowledges and skills. We are at our best when we inspire the student. The student is at his best when he is inspired intrinsically, first, to pursue learning; second, to incorporate it within his framework of aptitudes, interests, personality temperaments, achievements, and masteries; third, to use it to solve his problems and accomplish his tasks by either diverging away from established patterns of thinking and production or by converging upon a problem with established patterns of thinking and production; and, fourth, to stretch his capacity by finding characteristics-irrelevant knowledges, conceptualizations, and skills to pursue on his own.

The Unique Contributions of the Curriculum Domains to Basic Learnings

Although the curriculum program will be as integrated in practice as possible for the good of the student and his needs, there will be an appearance of separate curriculum domains. These will be discussed more fully in a later section, but for each of them there is a uniqueness which contributes to the student's basic learnings and to his problem solving. The chart on the following page is one way of portraying the interaction among the domains in contributing to those learnings. The key to this interaction is the degree to which the trends of the student's characteristics are identified by himself and the teacher-counselor.

The program for the student will spring from those characteristics in such a way as to use the student's natural inclinations. His spontaneous learnings will be greatly sustained and will be highly significant if the student's curiosity, desire for competence, aspiration to emulate a model, and commitment to interaction with other persons are respected and encouraged by the program and by the teachers.

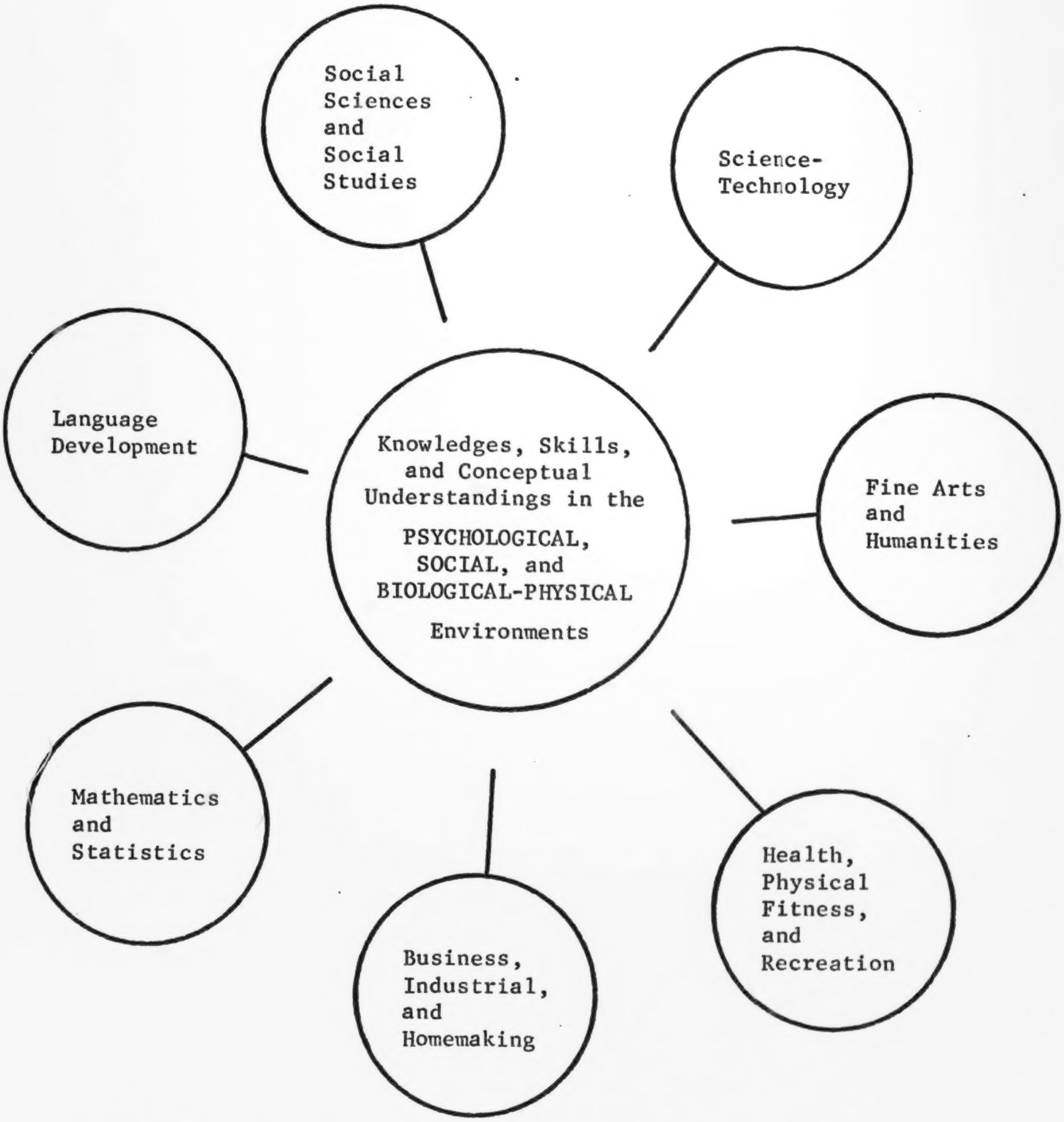
Those spontaneous learnings are vital to the student's welfare, because he will be faced with a world and environments which pose problems and tasks for him to solve and accomplish. In the psychological environment he will be faced with questions; such as: Who am I? What am I? Where am I going? Why am I going there? What am I going to do when I get there? How will I do it? What will I need to do it? Where have I been? What happened to me there? Why am I what I am today? etc.

In the social environment, he will be faced with questions; such as: Who are the people around me? What are they? What are they doing here? Where are they going? Why are they going there? What are they going to do when they get there? Why will they do it? How will they get there? Where have they been? What happened to them there? Why did it happen to them? Where do they and I relate? What can they contribute to my life? What can I contribute to their lives? etc.

In the biological-physical environment, he will be faced with questions; such as: How do I survive? What are my survival needs? How do I keep them satisfied? How do I ensure success in satisfying them? How do I prevent failure? How do I turn failure into success? How do I prevent success from deteriorating into failure? etc.

These are the basic questions the student is faced with today and will be more increasingly faced with as he grows and matures. At every turn in his life he will be faced with the basic need to adjust to changes in his environments. He will constantly seek out, at one time or another, one or more of the following adaptive behavioral experiences: ingestion of food, shelter from the

AN INTEGRATED-CURRICULUM APPROACH TO THE EDUCATIONAL PROGRAM OF AN INDIVIDUAL STUDENT


Social Sciences and Social Studies
Science-Technology
Language Development
Knowledges, Skills, and Conceptual Understandings in the PSYCHOLOGICAL, SOCIAL, and BIOLOGICAL-PHYSICAL Environments
Fine Arts and Humanities
Mathematics and Statistics
Business, Industrial, and Homemaking
Health, Physical Fitness, and Recreation

environment, setting aside of space for himself and for his kind, personal relationships, care-giving to other persons, care-seeking for himself and for his kind, and social group-oriented organization for survival.

In all of those questions, there exists the greatest possibility for spontaneous learnings by the student. The program and the teacher-counselors will focus on those questions and on the student's right to seek answers to them. Of the many possible threads through such a program, there are three important ones which the curriculum should attempt to follow: mental health, sex-related personal behavior, and career development. The closest relationship between the school and the home (parents, legal guardians, etc.) of the student will exist in developing these three threads. The school will work with the home to develop experiences for each individual student in each. The school's position is that awareness, knowledge, skill, and conceptualization in mental health, career development, and personal behavior are initiated, reinforced, maintained, and generalized through exposures to a variety of program strategies dealing with assignments in the psychological, social, and biological-physical environments.

The program will not treat each of these threads as a separate entity. To do so would be to place emphasis in the wrong direction. The threads will be interwoven into the whole body of knowledge and understandings, which we refer to as separate curriculum domains.

When this document refers to the existence of one basic curriculum, it is referring to the use and development of the inductive-deductive reasoning process by which the individual person may, if he chooses, attack his problems. It is a technique of thinking and of problem solving which can be used to deal with the basic threads winding through the entire program. It is also a technique which the teacher-counselors will learn well and use in their program planning with students. They will also, as part of their career employment in the Center, learn to apply this technique to their own career development, mental health, and personal behavior.

Scientific Investigation

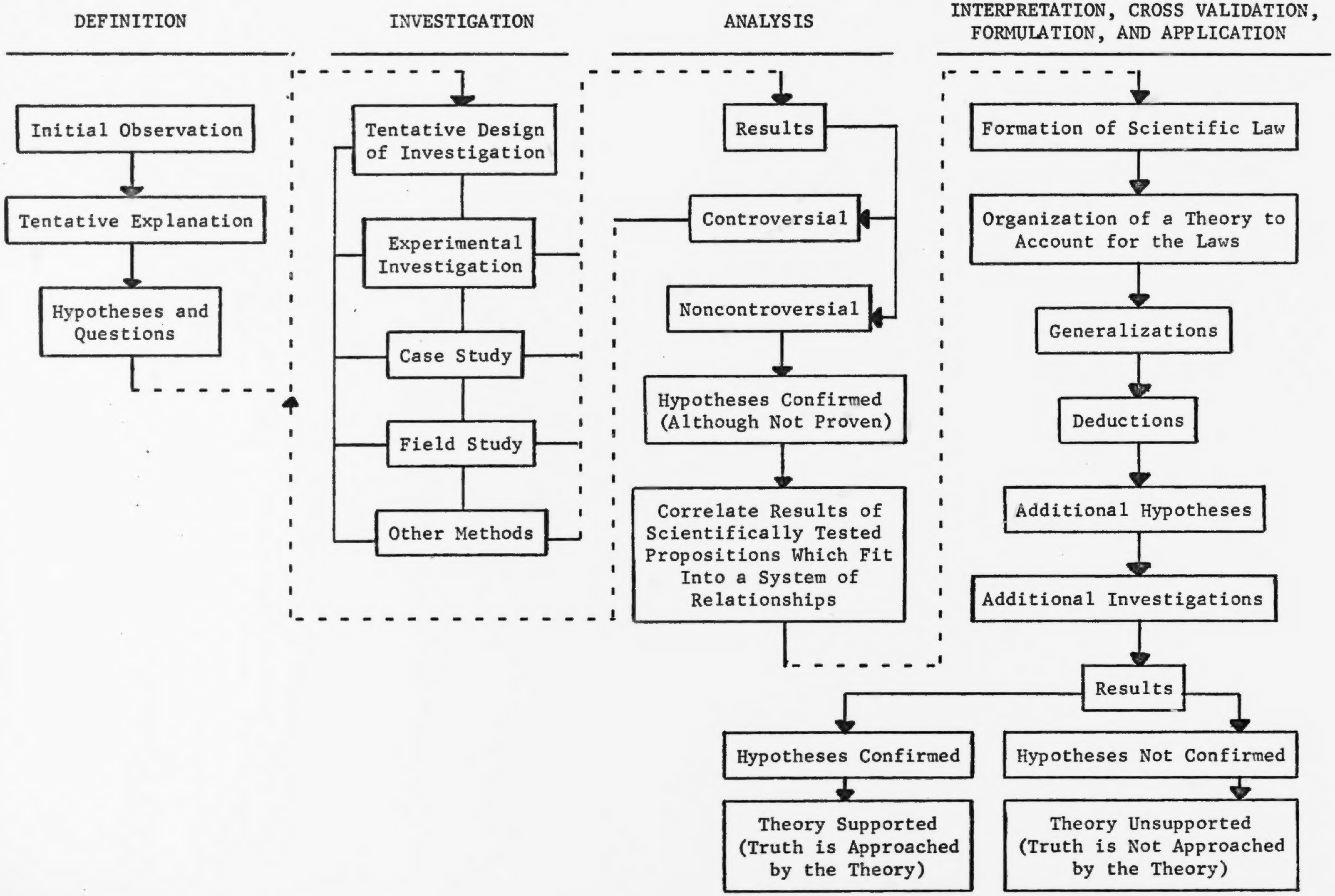
That technique is illustrated in the diagram on the following page entitled "THE GENERAL PLAN OF SCIENTIFIC INVESTIGATION." As will be said many times in this document, "scientific" is intended as a global approach to all problems. It is not to be construed to mean that "science" is a separate domain any more than mathematics as the basic language of "science" is separate from other areas of knowledge.

Strategies of Learning

Many students by the 9-12 level will begin to recognize ultimate career and personal goals for which they may strive, goals which will be explored by educators and students. When goals are clear, it will be a function of curriculum development to work backward, carefully defining prerequisite knowledges, conceptualizations, and skills until the path of learning is well outlined for the student. This process is described later in this document.

Such knowledges, conceptualizations, and skills transcend subject matter or curriculum domains. They direct the program toward use of facilities and

THE GENERAL PLAN OF SCIENTIFIC INVESTIGATION


DEFINITION
INVESTIGATION
ANALYSIS
INTERPRETATION, CROSS VALIDATION, FORMULATION, AND APPLICATION
Initial Observation
Tentative Explanation
Hypotheses and Questions
Tentative Design of Investigation
Experimental Investigation
Case Study
Field Study
Other Methods
Results
Controversial
Noncontroversial
Hypotheses Confirmed (Although Not Proven)
Correlate Results of Scientifically Tested Propositions Which Fit Into a System of Relationships
Formation of Scientific Law
Organization of a Theory to Account for the Laws
Generalizations
Deductions
Additional Hypotheses
Additional Investigations
Results
Hypotheses Confirmed
Hypotheses Not Confirmed
Theory Supported (Truth is Approached by the Theory)
Theory Unsupported (Truth is Not Approached by the Theory)

time for the sake of permitting and helping the student at a given point apply solutions from as many domains and fields as are relevant to his problem and to his characteristics.

Where possible, such definition of training and education needs will lead to program matrices in which are shown the interrelationships, first, among the knowledges, conceptualizations, and skills; second, among the media, modes, time units, and facility spaces; and, third, between these two main components of the total program. For a given student, there are relevant knowledges, conceptualizations, and skills which can best be presented through a certain combination of media, modes, time units, and facility spaces. This will constitute for that student the strategy of learning he will pursue.

Materials, Media, and Modes

The most direct approach to this strategy will be through maximum use, first, of pre-prepared, unique (isolated), and precise learning materials; second, of a variety of media; third, of staff experience with and versatile use of modes; and, fourth, a staff which is competently trained and experienced in the development, selection, and use of these materials, media, and modes.

The charts on the following pages outline the management functions of educators. These include most of the techniques, events, and processes the educator will touch upon in every instance of program planning in the Middle School and the Southeast Education Center.

The priorities in educational decisions are listed in the order in which they occur for most students and in which they will be followed by the teacher-counselor. The component functions of the learning situation are also listed in the order of the most likely usage. There is no order to the modes and media.

Every time a teacher-counselor considers a program for a student, he will need to consider all of these. He will relate media to modes, modes to functions, and functions to media. Two priorities in educational decisions have the most to do with such considerations--conditions for learning and motivation and inspiration of learning. For example, maybe the teacher-counselor and the student have constructed a program in which the first step is that of providing a model for terminal performance. In order to set the optimum conditions for the terminal performance that model represents, perhaps the most appropriate mode is a laboratory-type experience. Maybe the right kind of medium in that laboratory experience would be objects for instruction. Accompanying that medium might be several others; for example, demonstration, oral communication by the educator, etc.

Although much is known about the relationship of these sequences of decisions, of functions, and of these modes and media to learning, there is no established body of knowledge about these relationships. No educator could say to what degree one mode accomplished "presenting the stimulus" better or worse than some other mode. No educator could say in what combination of student characteristics one medium is better or worse than another. Decisions made about such things are mainly intuitive decisions. It can be, and sometimes is, a very sound decision, but this is true only when the educator is well grounded in the knowledges, conceptualizations, and skills involved in making

COMPONENTS OF THE LEARNING MANAGEMENT SYSTEM

First

Characteristics of the Student

Present and Potential:

- Interests
- Aptitudes
- Achievements, masteries
- Temperaments
- Attitudes
- Physical capacity and phenotype
- Family expectations
- Aspirations
- and so forth

Also: Age and Sex

Second

Curriculum Content-Organization-Structure

Knowledges, Conceptualizations, Skills:

- Social Science-Social Studies
- Mathematics-Statistics
- Language Development
- Science-Technology
- Business-Industrial-Homemaking
- Fine Arts-Humanities
- Health-Physical Fitness-Recreation

Third

Component Functions of The Learning Situation

In Sequence:

- Providing a model for terminal behaviors
- Presenting the stimulus
- Directing attention and other behaviors
- Guiding the direction of thinking
- Furnishing external prompts
- Assessing learning attainments
- Providing feedback to the learner
- Inducing transfer and generalization

Fourth

Teacher-Counselor Characteristics

Present and Potential:

- Interests
- Aptitudes
- Achievements, masteries
- Temperaments
- Attitudes
- Physical capacity and phenotype
- Aspirations and expectations
- and so forth

Also: Age and Sex

Fifth	Organization Strategy	Large group Medium group Small group seminar Small group project Independent study
Sixth	Modes of Learning	Tutoring drill and practice Lecture Discussion Recitation Laboratory Homework On-the-job Training
Seventh	Media of Learning	Objects for instruction Demonstration Oral communication by the teacher-counselor Printed language Still picture Motion picture with/without sound Television Teaching machines, computer terminals
Eighth	Time Units	Years Months Weeks Days Hours Minutes Seconds (Any one, combination, or/and subdivision of these)

Ninth

Facilities
Spaces

- General Learning Area Carrel
- General Learning Area Seminar Area
- General Learning Area Teacher Office
- Learning Resource Center
- Large Group/Auditorium
- Experimentation Center
- Computation Center
- Design Center
- Fabrication Center
- Reproduction Center
- Performance Center
- Broadcast Center
- Building Maintenance Area
- Delivery and Supply Area
- Grounds and Outdoor Area
- Food Service Area
- Physical Fitness and Recreation Center
- Administrative Center and Offices
- Park Department Gymnasium
- Park Department Pool
- Park Department Playfield
- Others

the decision.

This Southeast Education Center program in individualizing curriculum is designed to lead to quantified answers to questions about how students learn. It is well known that no two students learn everything in the same way, or that a single student learns everything with the same type of learning. There are some basic kinds of learning which any one student can pursue, depending only upon his needs and the content of what he is learning. They are: problem solving learning, signal learning, principle learning, stimulus-response learning, concept learning, chaining, multiple discrimination learning, and verbal-associate learning. The program will elaborate these types of learning in relationship to the characteristics of the student. Much is yet to be learned about them.

Assessment of Learning Attainments

The assessment of learning attainments, of mastery, of achievement will be a critical part of the over-all program. It is an area of confusion in some programs which will be studied carefully in the Center and Middle School program. Testing and evaluation will comprise the main components of that assessment. As much as possible of the testing and evaluation will be built into the actual curriculum program.

Testing and evaluation are designed to:

First, inform the individual of the degree to which he succeeded at adjusting to his environments (FEEDBACK);

Second, inform the individual of the type and degree of further attempts he needs to make to continue his adjustment or of changes he needs to make in his efforts so that he achieves even greater adjustment (MOTIVATION); and

Third, inform the individual of the process of evaluating and test his attempts in order that he may later be more alert to those attempts and thus to be ready to make more successful attempts at adjusting (EDUCATION AND TRAINING).

All such testing and evaluating will be, in the main, criterion-referenced, rather than norm-referenced. When norm-referenced (standardized) tests and measures are used, it will be according to the needs of the individual student, and he will be scheduled along with other students for that test or measure. The Southeast Education Center will need to conduct its own testing. Far less norm-referenced testing will be needed for comparative studies with national, state, and local groups. It will be done at points in a student's progress at which the feedback from such testing will benefit program planning at major breaks in the program. This might be when the student is making the transition from the Lower School to the Middle School and from the Middle School to the Upper School.

In the development of the testing and evaluation program, items will be developed which will be shown to have criterion value in relationship to a certain combination content, curriculum organization, curriculum structure, media, modes, time units, facilities spaces, teacher-counselor characteristics, etc.; in other words, the over-all strategy for learning. The source of this information will be the students' characteristics themselves. This will be the initial base.

From such an item base can come both the curriculum as well as the testing and evaluation program. In fact, criterion-referenced testing and evaluating will develop naturally out of the curriculum as it is developed and tested and refined. What the strategies are designed to accomplish, the testing will merely measure.

"Basic skills" testing, as it is known in norm-referenced testing, may be the largest type of norm-referenced testing in the Center and Middle School. It will probably be done at the end of a program or it may be done at the beginning before the student is involved in program planning. If he achieves a level of mastery on the test which makes basic skills training unnecessary, then his program will probably not include basic skills training. Periodically, he may be tested to ensure that his basic skills are intact, especially when he is contemplating a type and degree of program which has as its prerequisites a type and degree of basic knowledge, skill, and/or conceptualization in one or more areas before he can tackle the actual program. He may have left an earlier program which requires that set of skills, and he now has come back to the program for reentry; he will need to know if he can pick up where he left off, or retrace earlier learnings, jump ahead in the complete program because he is too advanced for it, or completely drop the program because of changes he has undergone in the interim.

In order to effectively provide the student with feedback, motivate the student, and educate and train him in the process of evaluation and testing, the student himself will need to be involved in his own testing and evaluation. He will need to test himself when such testing is separate from the actual curriculum program. He will need to score his own tests, record his results, analyze them, and use the data to revise his program of studies. The more closely his testing is referenced to the criteria which form the basis of his studies, the more meaningful his testing and evaluation will become. Thus, in the Middle School and Center program, most of the testing and evaluation will be criterion-referenced.

Testing and evaluation will serve, basically, as a step in the process of learning. Test scores *per se* will be important for the help they give to the student in taking the next steps in his program.

Flexibility of the Student's Mind

The human mind is far more flexible than most educational programs. This is one reason for having an integrated curriculum which will not compartmentalize the student into set time units for set curriculum domains.

Much is known about how to construct this kind of curriculum, yet much remains to be discovered about the student. It is the intent of the Southeast Education Center to base educational decisions upon valid and reliable knowledge; to relate media, modes, basic learnings, and student characteristics to each other; to produce truly criterion-based achievement and mastery; and to make learning as individualized and continuous as possible.

Grades, Credits

The present array of certificates, diplomas, grades, and credits often leads to coursework which is inappropriate or redundant. These will be investigated in a comprehensive study of the learning process in relationship to all of the media, modes, functions, time units, facilities spaces, curriculum content, curriculum organization, curriculum structure, staff characteristics, student characteristics, and parent/legal guardian characteristics. This will require a complete analyses of their interrelationships and interactions and will be a principal research function of the Southeast Education Center. The analysis will lead to a more precise understanding, development, and use of criteria for, and reinforcement of, progress in learning.

Grouping and Independent Study

The materials, media, modes, and staff characteristics will be indexed for the sake of planning study modes. These will be of three basic types: large group, small group seminar, and independent study.

The large group will deal primarily with orientations and dissemination of information through audio-visual media or by guest speakers and lecturers. The information may be transmitted to many students simultaneously, whether they are in their carrels or gathered in assembly.

The small group seminar deals with intensive investigation of a problem and its solutions by groups of students who have come together because of a commonality among them; its main emphasis is upon discussion among individuals.

Independent study is the basic mode, and it will be the most challenging one for the staff, consequently the facilities and programs must be designed to support it. Much of the stimulation of the student in his learnings will take place in independent study, and much of his achievement of terminal objectives will result as a direct consequence.

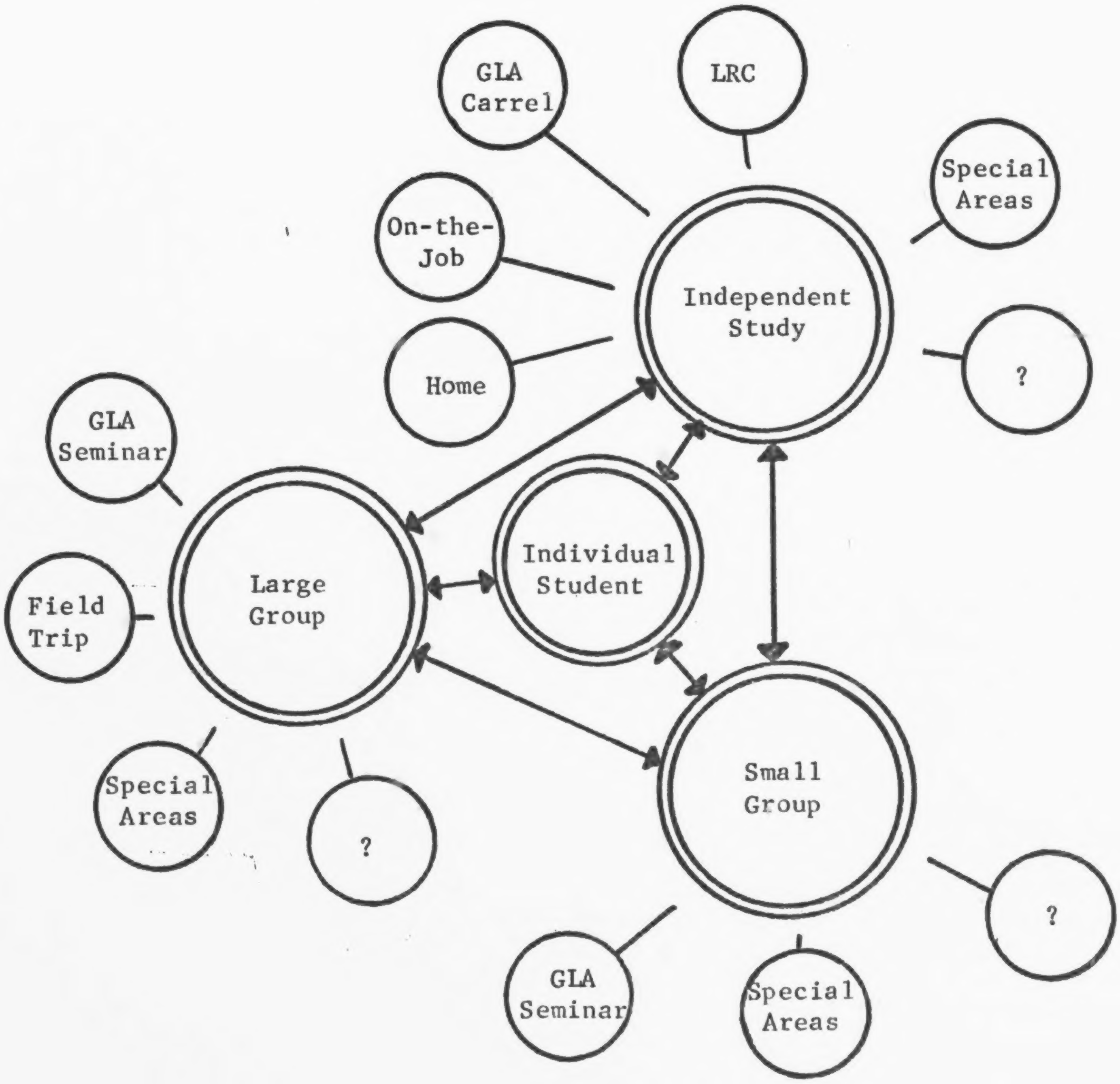
All three modes--large group, small group, and independent study--will impinge upon the student at any given point in time and thus complement each other (see diagram on Page 47).

Misunderstandings sometime occur about the values of group paced and individualized learning. "Group paced" learning requires the student to look upon, think about, work at the same objects, processes, events, materials upon which, about which, and at which every other student is looking, thinking, and working. This is not necessarily unproductive, but it should be done when the common need of the students as a group directs it. It should not be the principal mode of learning. "Individualized learning" is a system in which the learning by a single, uniquely individual student is meaningful, even when he is within a group of other students. Individualized learning is not synonymous with physical isolation. It means that learnings are unique to the student and that when in a group of other students, his unique contribution is recognized. His schedules will permit considerable independent study as well as time to work with other students.

It is also important for the student to learn early in his career more about himself in relation to other students and to learn more about those other

INTERACTION OF THE INDIVIDUAL STUDENT WITH THE THREE BASIC LEARNING MODES

(Large Group, Small Group Seminar, and Independent Study)


GLA Carrel
LRC
Special Areas
On-the-Job
Independent Study
Home
?
GLA Seminar
Individual Student
Large Group
Field Trip
Special Areas
?
Small Group
?
GLA Seminar
Special Areas

students and their needs.

The program in the Lower School will provide a large amount of time for students to gather in small groups to discuss common problems, common ideas, common goals, common program units, and other things they have in common. This is why small group instruction will be the primary mode in the Lower School.

The Replica Concept

A concept of organization of the Center which has been proposed for further study would make the Center schools into a replica of society. This could mean that the Center would become a small scale political, social, and economic institution. It could contain full representation in all three of these components, including industrial, business, social, political, professional, career, job, employment, learning, etc.

It could mean that the students would organize themselves into as many facets and aspects of those political, social, and economic components as befit their talents and interests.

Student government could be in the hands of the older students, as is the civil government in the hands of the mature citizens. It could replicate a cross section of local, state, regional, and national politics as we now have in the United States.

Certain business services in the form of sales and distribution and in the form of food and other services could be student managed.

Scientific and technological careers could be the goal within the Center of those students with aptitudes, interests, etc., for such careers, and actual career opportunities could exist outside the Center for those students, just as they could for any other student in other fields.

The opportunity for these kinds of group involvement of students would be unlimited, and in the final analysis, group activity will be a major mode of learning within the Center.

Independent study, nonetheless, serves a definite function on a small scale in the Lower School, on a greater scale in the Middle School, and on an even greater but differential scale in the Upper School.

PART D

THE INDIVIDUALIZED PROGRAM

The individualized program of the Middle School will lead to a curriculum which is developed out of specific needs of the student. In the past it has been customary for uniform courses of study to be developed to which students are assigned.

The curriculum in the Middle School will take the point of view that there are many curricula and a variety of curricula combinations which are useful to students. Curricula development will grow from at least seven basic domains. Only the resources will limit its scope and types of instructional strategies and materials. It will follow the process diagrammed on the next page, which compares the present with the new point of view.

As the student enters the Middle School, he will be assessed for his unique characteristics and assigned as closely as possible on the basis of those characteristics to a teacher of one of the eight sections. This assessment will be by means of standardized tests and measurements, interviews, questionnaires, anecdotal records, observations, and/or previous data from his student personnel file.

After assignment to a professional staff person and to a student section, the student will be helped to prepare a preliminary program by the teacher. Future program planning is accomplished in the same way and will be approximately in the sequence described on following pages.

Learning Management and the Digital Computer

During the planning of an educational program by the teacher and the student, another resource of the Middle School and the Southeast Education Center will be applied. This is the educational data stored in the computer. The computer will serve several functions, of which two are directly related to learning; first, it will help educators manage the learnings; and, second, it will serve as a learning tool. The first function is "computer-aided educational management" (CAEM); the second is known as "computer-mediated instruction" (CMI).

An outgrowth of these two functions is the teaching of computer science and technology to students. In the CAEM function, the computer will be used for analyzing and programming students.

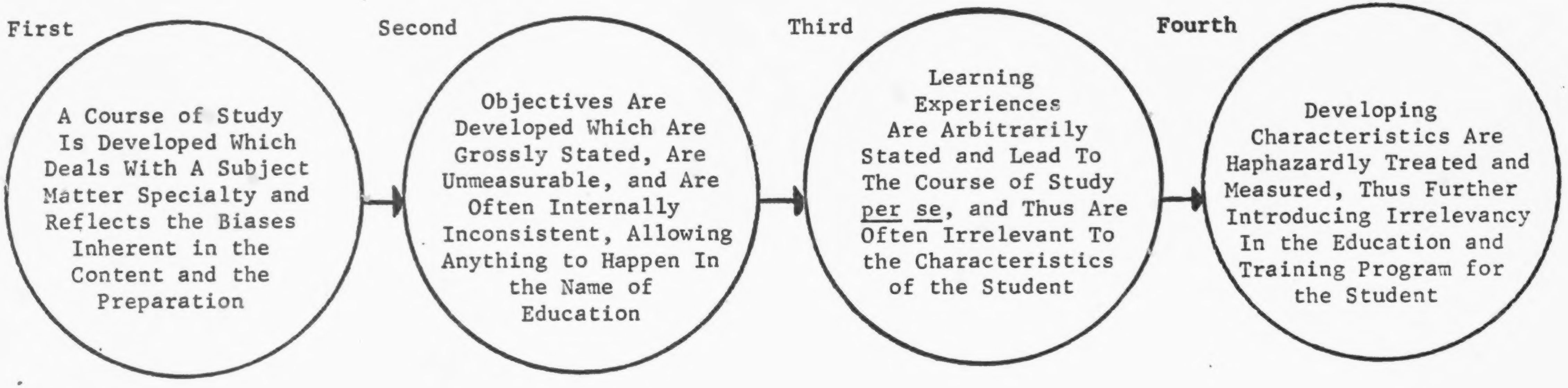
After a program has been completed, the teacher and student, as well as all affected staff persons, will receive a print-out of the student's program which provides the curriculum materials, media, modes, time units, facility spaces, and other related information needed to implement the educational program.

Program Planning By the Teacher and the Student

On the following pages are two schemes which represent the process by which the planning of an educational program for an individual student will be done.

A COMPARISON OF TWO WAYS OF INDIVIDUALIZING INSTRUCTION AND DEVELOPING CURRICULUM

Old Way (Not Always Individualized):



First

A Course of Study Is Developed Which Deals With A Subject Matter Specialty and Reflects the Biases Inherent in the Content and the Preparation

Second

Objectives Are Developed Which Are Grossly Stated, Are Unmeasurable, and Are Often Internally Inconsistent, Allowing Anything to Happen In the Name of Education

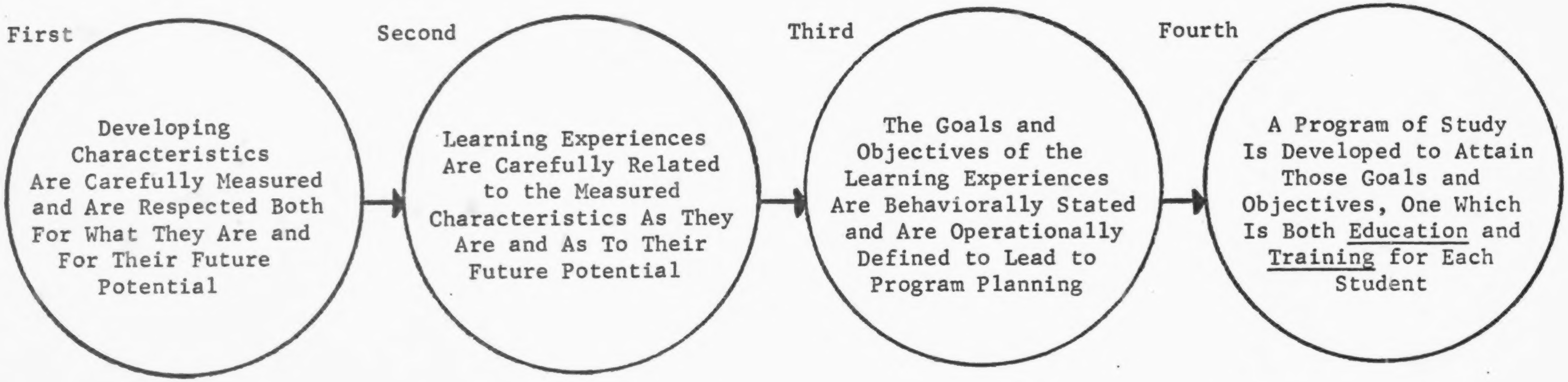
Third

Learning Experiences Are Arbitrarily Stated and Lead To The Course of Study *per se*, and Thus Are Often Irrelevant To the Characteristics of the Student

Fourth

Developing Characteristics Are Haphazardly Treated and Measured, Thus Further Introducing Irrelevancy In the Education and Training Program for the Student

New Way (Will Need Constant Surveillance to Ensure Individualization):



First

Developing Characteristics Are Carefully Measured and Are Respected Both For What They Are and For Their Future Potential

Second

Learning Experiences Are Carefully Related to the Measured Characteristics As They Are and As To Their Future Potential

Third

The Goals and Objectives of the Learning Experiences Are Behaviorally Stated and Are Operationally Defined to Lead to Program Planning

Fourth

A Program of Study Is Developed to Attain Those Goals and Objectives, One Which Is Both Education and Training for Each Student

The first scheme (I. ANALYSIS OF A PROBLEM AND DESIGN OF A SOLUTION TO THE PROBLEM) is the general case and outlines the process by which any problem is solved, whether it is related to an educational program, a research question, a management problem, or a system analysis of a static component or system.

The second scheme (II. PLANNING AND CONTRACTING AN INDIVIDUAL PROGRAM WITH A STUDENT) is the actual process the teacher would follow in planning the educational program with the student. It shows some of the types of inputs and outputs required in this planning. It shows some relationships between the program and external events.

One of the main functions of the stored-program digital computer system is evident in this process, that is, recording the program units and requirements so that at any given point in time the student and his teacher-counselor know what is available and when, as well as alternative routes. When the student's program cannot be fully implemented because of scheduling conflicts and/or shortage of program units, the data system places the student on a priority list for those materials, media, modes, time units, and spaces which could not be scheduled for the moment but which are vital to the student's program.

This type of planning will be required only occasionally since its thoroughness will serve the student for long periods of time and its flexibility will permit modifications as the student progresses.

An example of this type of program plan is presented on page 58. This example shows a one-week program and shows the student assigned to areas rather than subjects. For example, on Monday he is assigned to the general learning area, seminar area, learning resource center, learning area, and so forth, in that order. In any of these areas he may cover the gamut of the curriculum offerings; namely, language development, social science-social studies, mathematics-statistics, and so forth. This enables the student to distribute his study time more efficiently within the area and gives him more opportunity to make his own decisions.

The chart shows the kinds of spaces and facilities available to the student and the relative amounts of time he could spend in those spaces and facilities. It is based on a seven-hour day average in which some days are less and some days are more than seven hours. The starting time and ending times are flexible. The time units are 15 minutes each. The student with a seven-hour day average would have 140 of these time units during a given week. The possible range of scheduled time units may be from 8:00 A.M. to 5:00 P.M., with the student selecting 140 units within that range over the five-day period.

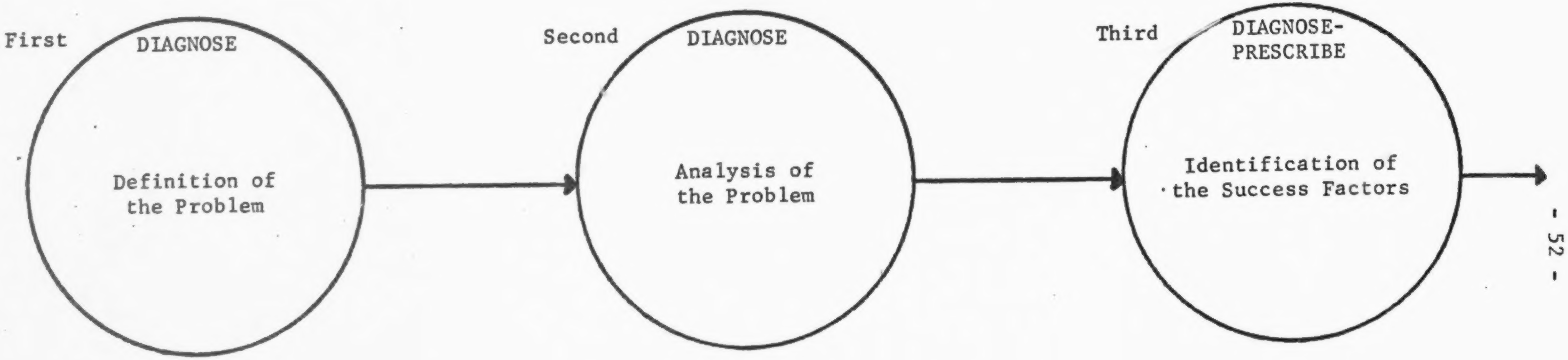
I. ANALYSIS OF A PROBLEM AND DESIGN OF A SOLUTION TO THE PROBLEM
(Working With a Student to Plan a Program of Study for the Student)

Part 1 of 3 Parts

You want a new program? Why? What do you mean by "a new program?" . . .

Let's look at what you are doing now and decide what type of program you need. What would you like to do? Why? . . .

What types of events and processes will affect your program? What are their chances of occurring? How do you ensure their occurring? . . .


First
DIAGNOSE
Definition of the Problem
Second
DIAGNOSE
Analysis of the Problem
Third
DIAGNOSE-PRESCRIBE
Identification of the Success Factors

Statement of the Problem

Statement of the Internal Restraints and Constraints

Statement of the External Restraints and Constraints

Statement of Goals and Objectives (Behavioral and Operational)

Statement of Tasks Leading to Attainment of Those Goals and Objectives

Statement of Functional and Operational Interaction Between Tasks and the Goals and Objectives

Statement of Success (Positives and Strengths) Factors Based Upon What-When-Where-How-Why Analyses (Factor, Multiple Regression, Canonical Correlation, etc. Analyses)

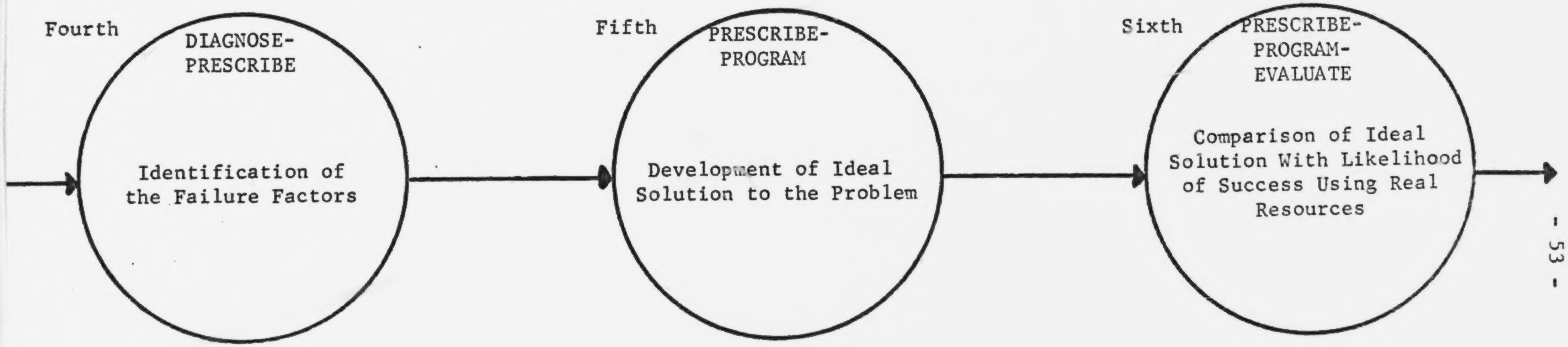
I. ANALYSIS OF A PROBLEM AND DESIGN OF A SOLUTION TO THE PROBLEM
(Working With a Student to Plan a Program of Study for the Student)

Part 2 of 3 Parts

What types of events and processes will affect your program? What are their chances of occurring? How do we prevent their occurring? . . .

Let's put this together with that. How about some of this and some of that? Have we included those? Impractical, maybe, but . . .

Let's see. Will what we have planned and organized work? What might happen that we did not foresee? Let's try it out . . .


Fourth
DIAGNOSE-
PRESCRIBE
Identification of
the Failure Factors
Fifth
PRESCRIBE-
PROGRAM
Development of Ideal
Solution to the Problem
Sixth
PRESCRIBE-
PROGRAM-
EVALUATE
Comparison of Ideal
Solution With Likelihood
of Success Using Real
Resources

Statement of Failure (Negatives and Weaknesses) Factors Based Upon What-When-Where-How-Why Analyses (Factor, Multiple Regression, Canonical Correlation, etc. Analyses)

Statement of Program Components, Processes, Events (Curriculum, Teacher-Counselors, Media, Modes, Time Units, Facilities Spaces, Strategies, Functions, etc.)

Simulation, Tryout, Pilot Study with Small Sample of Real Programs or Real Persons, Processes, Events, Products, etc.

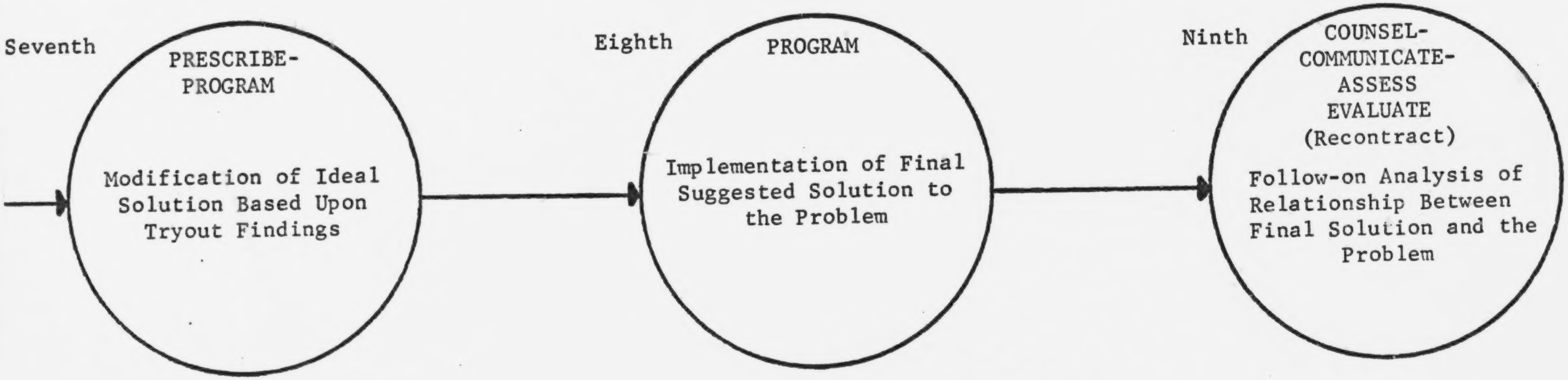
I. ANALYSIS OF A PROBLEM AND DESIGN OF A SOLUTION TO THE PROBLEM
(Working With a Student to Plan a Program of Study for the Student)

Part 3 of 3 Parts

Well, we found out what would and what would not work. Here is what must be done now. Let's make the following changes in your program . . .

You go ahead with this program and try it just as it is. If you have any trouble, let me know and we will try to work the problem again . . .

How's the program going? What successes and failures are occurring? Do you need some help? Are there other program components you need, or other programs you'd like? . . .


Seventh
PRESCRIBE-PROGRAM
Modification of Ideal Solution Based Upon Tryout Findings
Eighth
PROGRAM
Implementation of Final Suggested Solution to the Problem
Ninth
COUNSEL-COMMUNICATE-ASSESS EVALUATE (Recontract)
Follow-on Analysis of Relationship Between Final Solution and the Problem

Restatement of Program Components, Processes, Events, etc. (Curriculum, Teacher-Counselors, Media, Modes, Time Units, Facilities Spaces, Strategies, Functions, etc.) to Conform to Evaluation Findings

Application of Final Processes of the Learning Management System

Statement of Successes

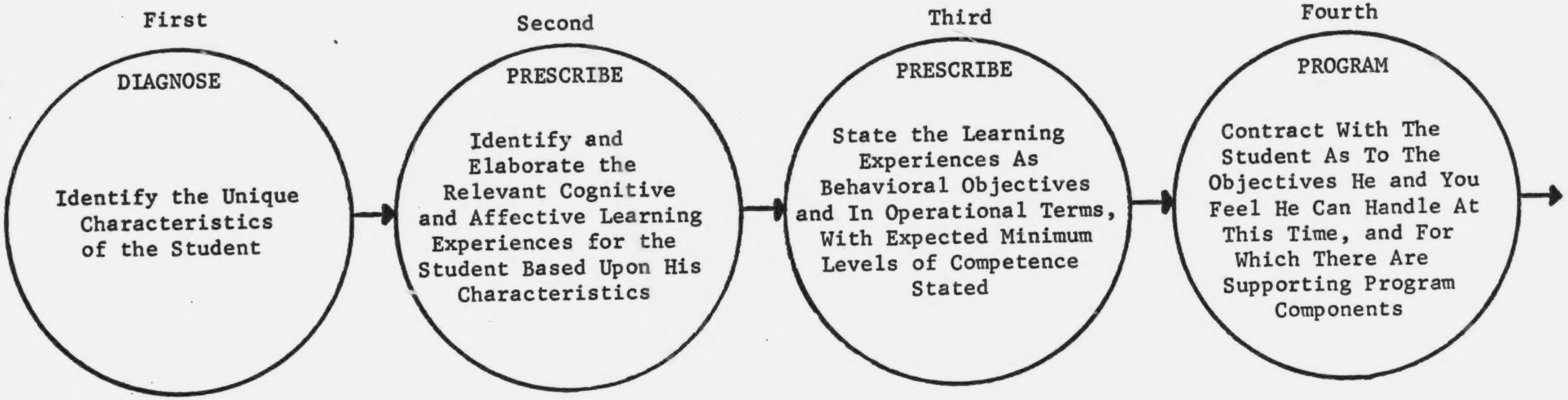
Statement of Failures

Identification of Factors Involved in Successes and Failures

Statement of Redirection Based Upon Evaluation Findings

II. PLANNING AND CONTRACTING AN INDIVIDUAL PROGRAM WITH A STUDENT

Part 1 of 3 Parts


First
DIAGNOSE
Identify the Unique Characteristics of the Student
Second
PRESCRIBE
Identify and Elaborate the Relevant Cognitive and Affective Learning Experiences for the Student Based Upon His Characteristics
Third
PRESCRIBE
State the Learning Experiences As Behavioral Objectives and In Operational Terms, With Expected Minimum Levels of Competence Stated
Fourth
PROGRAM
Contract With The Student As To The Objectives He and You Feel He Can Handle At This Time, and For Which There Are Supporting Program Components

Standardized Tests and Measures

Questionnaires

Interviews

Observations

Anecdotal Records in File

Previously Recorded Data

In Psychological, Social, Biological-Physical Environments

Applying Inductive-Deductive Reasoning Process

Involving Knowledges, Skills, Conceptualizations

In All Domains of Learning

Goals and Objectives Stated Behaviorally

In Operationally-Defined Terms

In Measurable Terms

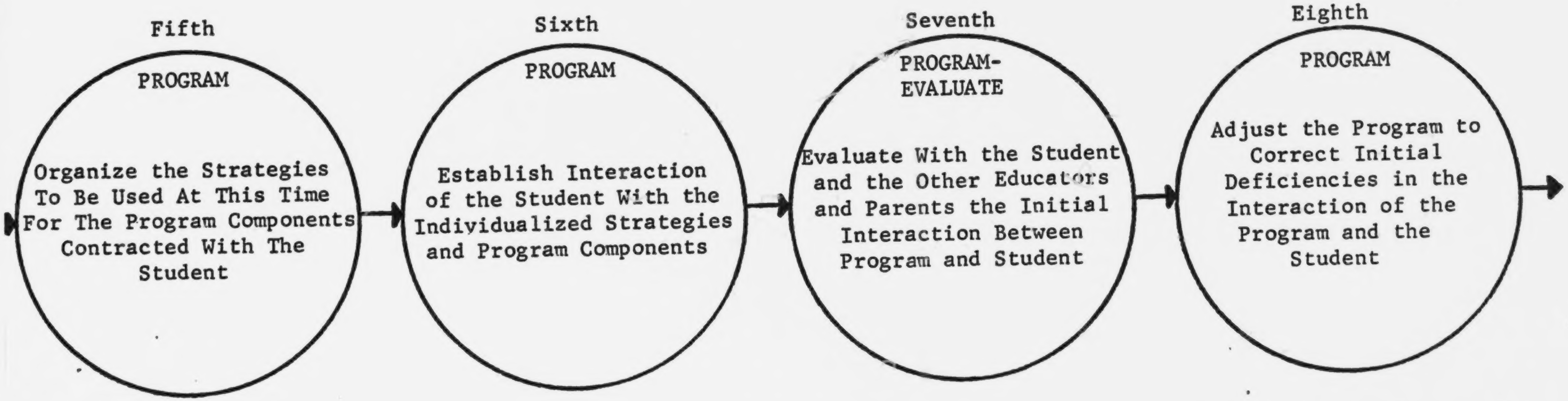
Taking Into Consideration the Student's Characteristics

Including Strengths

Including Weaknesses

II. PLANNING AND CONTRACTING AN INDIVIDUAL PROGRAM WITH A STUDENT

Part 2 of 3 Parts


Fifth
PROGRAM
Organize the Strategies To Be Used At This Time For The Program Components Contracted With The Student
Sixth
PROGRAM
Establish Interaction of the Student With the Individualized Strategies and Program Components
Seventh
PROGRAM-EVALUATE
Evaluate With the Student and the Other Educators and Parents the Initial Interaction Between Program and Student
Eighth
PROGRAM
Adjust the Program to Correct Initial Deficiencies in the Interaction of the Program and the Student

Curriculum Content, Organization, Structure

Teacher-Counselor(s)

Media

Modes

Time Units

Facilities Spaces

Organization Strategy

Provide a Model for Terminal Behavior

Present the Stimulus(i)

Direct Attention

Guide Direction of Thinking

Furnish External Prompts

Tests and Measures

Observation

Interviews

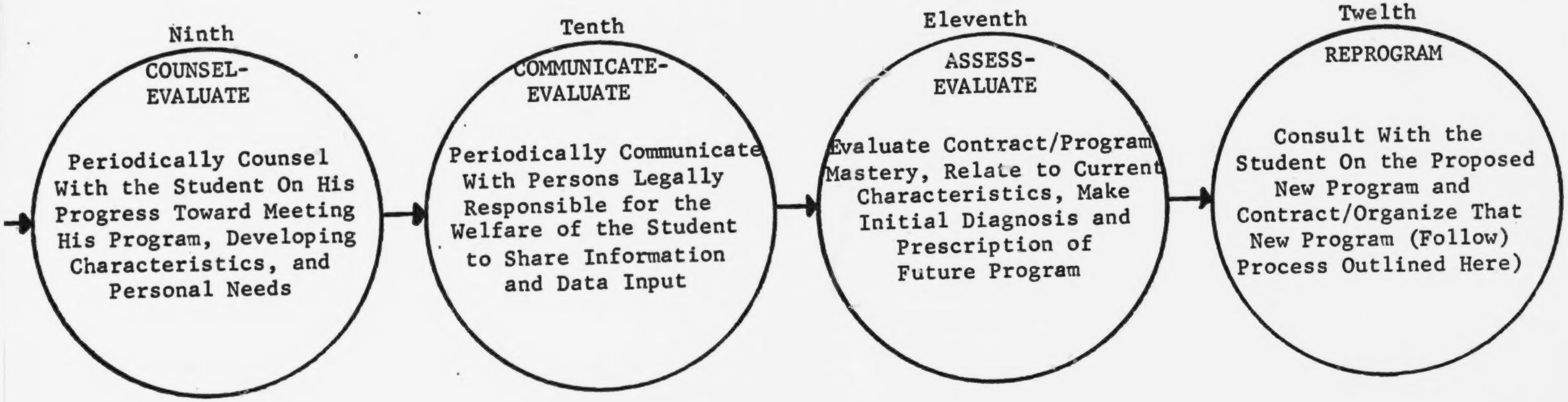
Questionnaires

Anecdotal Records

Shuffle Program Components to Form Ideal and Practical Mix

II. PLANNING AND CONTRACTING AN INDIVIDUAL PROGRAM WITH A STUDENT

Part 3 of 3 Parts


Ninth
COUNSEL-EVALUATE
Periodically Counsel With the Student On His Progress Toward Meeting His Program, Developing Characteristics, and Personal Needs
Tenth
COMMUNICATE-EVALUATE
Periodically Communicate With Persons Legally Responsible for the Welfare of the Student to Share Information and Data Input
Eleventh
ASSESS-EVALUATE
Evaluate Contract/Program Mastery, Relate to Current Characteristics, Make Initial Diagnosis and Prescription of Future Program
Twelth
REPROGRAM
Consult With the Student On the Proposed New Program and Contract/Organize That New Program (Follow) Process Outlined Here)

Scheduled Contact

Unscheduled Contact

Formal Contact

Informal Contact

Telephone Home/Business

Visit at Home

Host Parent/Guardian at School

Write to Home

and so forth

Tests and Measures

Questionnaires

Interviews

Observations

Anecdotal Information

and so forth

Diagnose

Prescribe

Program

Evaluate

Counsel

Communicate

Assess Attainments

and so forth

AN EXAMPLE OF AN ACTIVITY SEQUENCE FOR FIVE DAYS BY LEARNING AREA FOR AN AVERAGE STUDENT TWO YEARS INTO THE MIDDLE SCHOOL PROGRAM

(In time units of fifteen minutes each)

Time & Unit Number		Monday	Tuesday	Wednesday	Thursday	Friday
0800	1	▨	GLA	▨	▨	GLA
	2	GLA	LRC			PERFORM. CENTER
	3		SEMINAR	GLA	GLA	
0900	4	SEMINAR		PE GYM		SEMINAR
	5		FIELD		LRC	
	6					
	7	LRC		Break	EXPERIM. CENTER	
1000	8	GLA		LARGE GROUP 1-50		
	9				COMPUTER CENTER	LARGE GROUP 1-50
	10	DESIGN CENTER		SEMINAR		
	11				PERFORM. CENTER	
1100	12	FABRICATION CENTER				
	13					GLA
	14	GLA			BROADCAST CENTER	COMPUTER CENTER
	15	Lunch		Lunch		
1200	16		Lunch			Lunch
	17	GLA		GLA		
	18	COMPUTER CTR.	SEMINAR		Lunch	
	19	GLA		LARGE GROUP 50-375		DESIGN CENTER
1300	20		GLA		LARGE GROUP 1-50	FABRIC. CTR.
	21			GLA		DESIGN CENTER
	22		LRC		FIELD	GLA
	23		GLA	EXPERIM. CENTER		
1400	24	LRC	Break			SEMINAR
	25	SEMINAR	GLA			
	26			SEMINAR		
	27		LRC			
1500	28		GLA			
	29	▨	COMPUTER CTR.			
	30		DESIGN CENTER		GLA	
	31		REPROD. CTR.			
1600	32		GLA			
	33		▨	▨	▨	GLA
	34					
	35					▨
1700	36					

▨ Time when the student is not in scheduled activities but may be on the premises for such activities as intramural sports, student clubs, and so forth.

PART E

THE CURRICULUM AREAS

The Middle School will expose the student to an integrated curriculum. The exposure will be differential, when one looks at the separate curriculum areas, and more intensive according to the characteristics of the student. Within that focus will be a differential application of the various curriculum domains so that these domains do not receive equal application and program status. On the following page is a summary of the curriculum domains as a percentage of the total program time.

This summary suggests what the curriculum will look like for an average student two years into the program. Any individual student's program may vary widely from this distribution, but all programs will be symmetrically distributed around this average student's program.

An objective of the Southeast Education Center for students from age four through age eighteen will be to lead a student from small group-based learning and generalization to independent study, individual-based learning and specialization.

Career development will be one major goal, but a career development that will be conceived broadly enough that an individual need not go through a complete reeducation and retraining process in order to transfer his knowledges and skills across boundaries separating major occupations.

This means that in the early years programs will be devoted to making the student aware of the world around him in all of its variety. As the student progresses, he will become more and more specialized in those cognitive and affective areas which meet his interests and needs and relate to his characteristics.

By the time he has completed part or all of the program in the Upper School (9-12 level), he will be knowledgeable and skilled in two, three, or four integrated curriculum domains. He will know and understand how his training and education are related to post-secondary school training, education, and/or employment and be able to pursue them independently of others around him.

The Middle School focus will be on developing the individual trends. Therefore, the Middle Schools' contribution will be that of directing the staff attention, materials, modes, media, time units, facilities and strategies to the intellectual, emotional, and physical characteristics of the individual student at any given point in time so that the developing trends are enhanced in the broadest kind of way.

The "Scientific Method" and Problem Solving Through Induction-Deduction

The objective in this curriculum will be to teach the student to base his conclusions upon as empirically-based a system of observation as his unique characteristics permit. This means that his formal learning will employ "the scientific method," a method which will teach him to sample widely for data, test his data for reliability and validity, accept his tests as tentative

CURRICULUM AREA TIME AS A PERCENT OF TOTAL TIME*

Percent of Total Time	Curriculum Domain
17	Social Sciences-Social Studies
23	Language Development
15	Sciences-Technology
15	Mathematics-Statistics
11	Fine Arts-Humanities
10	Business-Industrial-Homemaking
9	Health-Physical Fitness-Recreation
100	TOTAL

* A composite average based upon the time estimates from five sources:

1. Seattle Public Schools, _Classroom Program for the Elementary Schools_.
2. J. Lloyd Trump, _Focus on Change_.
3. Robert Bush and Dwight Allen, _A New Design for High School Education_.
4. Elmo Little, Southeast Education Center Planner.
5. James S. Moore, Southeast Education Center Planner.

until he has cross-validated his observations before using them or discarding them as bases for conclusions.

His formal learning initially will be within the controlled situation where techniques, processes, methods, tasks, models, etc., are demonstrated by experienced, competent teachers. The teachers will be unbiased, resourceful, and will respect the individual student's present and potential characteristics. The student will then, on his own, apply his learning and make decisions.

All such learnings lead to the inductive process of building a conclusion from a series and/or collection of observations. The other process is the deductive process in which the student then applies his conclusion (principle) which he developed in the inductive process, to following observations so that they are assimilated and/or accommodated rationally and realistically, rather than irrationally and unrealistically.

The two-year-old child who is blocked under a kitchen table by the table supports and legs learns this process of induction-deduction by being allowed to get out without help. If he is lifted out, his learning to apply his observations to the task of getting out and then use this learning the next time he is blocked in will be delayed and critically handicapped for future use.

In the Middle School, the student will learn this process of reasoning with fewer demonstrations although demonstrations are a vital initial step for most students. The demonstration may be brief. In the flexible schedule of the Middle School, the student will receive periodic or aperiodic exposures to learning experiences which will give him a period of intensive work in a laboratory followed by another period of study which will give him time to apply his learning. He might, for example, pursue related studies in the general learning area, in the learning resource center, or in specialized centers completing a project that relates to his experiences in the entire program.

To solve the problems he will face in the future and to pursue his careers wisely and prudently, the student will need to become skilled at rational thinking (inductive-deductive reasoning).

All efforts in the Middle School will be toward helping the student shape himself into an inductive-deductive reasoner. He will become a student who has learned how to answer most of his own questions, how to pursue a topic with a minimum of dependence upon others, how to solve problems reasonably well and to learn because of those solutions, and how to critically analyze all propositions before him.

When presented with a problem on an examination, the student should not merely state knowledges and facts, but should test his process of problem solving. He will be asked to describe how the problem is solved, where he would go for information with which to solve the problem, how he would apply the information, how he would structure the solution, how he would test his solution, etc.

In all the history of education, there has never been written a list of objectives, an essay on cardinal principles, a book on the philosophy of education that has not had as its main emphasis the teaching of the inductive-deductive reasoning process to students at all ages. It may have been called "concept formation," "critical thinking," "logic," but the main ingredient is the putting together of observations in such a way that the conclusions drawn are valid and reliable.

The processes of inductive and deductive reasoning are content irrelevant--they can be taught with any type or degree of subject matter. The important thing is that they be taught so that they are retained and used. In order to see this kind of learning as having value for himself, the student must be able to relate it to the present.

The Relevancy of All Knowledges, Concepts, and Skills To All Students

The Southeast Education Center will stress through its program that all knowledges, skills, and concepts have some relevance for the individual student. It will be possible to say that "science is relevant for all students," "mathematics is relevant for all students," and so forth. The differential approach, the individualized approach, makes this possible.

Shakespeare becomes relevant to all students but from different vantage points, if Shakespeare is relevant at all to any student. Car repair work becomes relevant to all students but from different vantage points, if car repair work is relevant to any degree to any student. Whatever is relevant to learning is relevant to all students, but some will require it in application to some tasks and problems and other students will require it in application to other tasks and problems.

Whatever is taught and learned, must be taught and learned in a unique way by each and every student. The table shown in the earlier part of this section is merely an attempt to show that there are unique curriculum domains and that they will be dealt with differentially in the program of a given individual student.

The Integrated Curriculum

The more integrated the curriculum, however, the better the program will work to meet the student's needs. An integrated curriculum does not over-accentuate one area of knowledge, but rather it shows the interrelationship of all knowledges, skills, and conceptualizations.

Precision, Behavioral, and Operational Definition of Program Components

The chart on page 77 is one way of portraying the interaction among the various curriculum domains. It is not intended to show that curriculum domains lose their uniqueness and their vitality. The ultimate result of curriculum development in the Southeast Education Center will be a listing of precise statements of knowledges, conceptualizations, and skills; of subject matters within domains; of the content of such matters; of the various levels of those knowledges, conceptualizations, and skills; of modes and media appropriate to those domains, subjects, contents and knowledges, conceptualizations, and skills; and of the spaces appropriate to all of these. The tables on the following pages are one way of showing how such precise statements might be listed and how a single student might arrange for learnings in one subject matter, in this instance Spanish. The code numbers are only suggested ones.

Curriculum development mainly will be a more and more precise definition and delineation of content, to the point where knowledges, skills, and conceptualizations are so well defined that they become unique and differentiated, and sterile. They are sterile in that they will, of themselves, have no stimulation value for the student. They are not motivating in and of themselves. It requires many of those items together with media, modes, time units, facilities spaces, teachers, etc., to breathe life into the contribution of a single knowledge, conceptualization, and skill.

At the point where the content has been so differentiated that it has become sterile bits and pieces, it is ready for packaging according to the characteristics of the student. That package, or strategy, will consist of all the things and processes which lean heavily toward inspiring the student to initiate, reinforce, maintain, and generalize that knowledge, conceptualization, and skill. Every school will have access to the same curriculum content, but each will approach the packaging differentially so that no two schools would have exactly the same program. At the same time, however, all curricula are relevant for all students to some degree and within some type of strategy.

Recent attempts in areas such as "science" and "mathematics" to differentiate the concepts and knowledges represent this approach to curriculum organization. Such differentiation into bits and pieces is not designed to lock a student into location on a spiraling learning track or to retard movement through the spiral. It is designed to reveal the basic concepts, knowledges, and skills in a given area or domain. The student and teacher then have program options drawn from the basic concepts and knowledges of a field of study. Some students may package their own program to suit their own interests and needs.

Curriculum development will usually begin with the:

First, definition of the ultimate objective,

Second, tracing of the path to that ultimate objective from its terminus to its beginning,

Third, identification of feeder paths to the main stream,

Fourth, tracing of the feeder paths from their terminals to their beginnings,

Fifth, identification along the feeder paths of sub-feeder paths which are prerequisites of the feeder paths,

Sixth, tracing of sub-feeder paths from their terminals to their beginnings, etc.

Curriculum development will usually end with the:

First, statement of the ultimate objective,

Second, statements of prerequisite sub-objectives to that ultimate objective,

Third, statements of prerequisites to those sub-objectives, etc.

INDEX OF PROGRAM COMPONENTS AND STUDENT CHARACTERISTICS

(An example of what one student may take in the way of an educational program in one subject matter, e.g. Spanish.)

The following tables refer to ways in which the curriculum content, basic learnings (knowledges, conceptualizations, skills), media, modes, levels of mastery, student characteristics, and so forth might be indexed for the use of teachers and students in planning programs for those students. The example used is that of a student enrolled in a curriculum domain subject matter (Spanish language development). His student identification number might be 06008094766, for example based upon the following criteria:

Sex	Birth Year	Birth Month	Birth Day	Birthplace	Initial School Entry Year
*0 Male	*1960	01 Jan	01	01 Alabama	*1966
1 Female		.	to	to	
		.	31	50 Wyoming	
		*08 Aug		51 P. Rico	
		.		52 Vir.Isle.	
		.		53 Canada	
		12 Dec		54 Mexico	
				etc.	

This means that the student is a boy, born in 1960, In August, on the 9th day, in Washington State, who entered school initially in 1966.

His program code for the subject matter and learning experience he and his teacher have worked out for him would be 0204202070502010 1 (see Tables A-H for codes for asterisked inputs).

Some basic questions which will be asked of the student during the time he is pursuing his studies are:

How much time was this unit studied today?_______ How much time will it require to master this unit?_______ Level of mastery?_______ Answers to these questions lead to more precise statements about the way in which the student can learn and does learn. What media used?_______ What modes used?_______ What teachers contacted?_______ Which facilities used?_______ and so forth.

Ⓐ

CURRICULUM DOMAINS	
01	Social Sciences-Social Studies
* 02	Language Development
03	Sciences-Technology
04	Mathematics-Statistics
05	Fine Arts-Humanities
06	Business-Industrial-Homemaking
07	Health-Physical Fitness-Recreation

Ⓑ

SUBJECT	
01	English
02	German
03	Russian
* 04	Spanish
05	Japanese
06	Chinese
07	French
08	Hebrew
09	Swahili
.	
.	
n	

Ⓒ

KNOWLEDGES (1) CONCEPTUALIZATIONS (2) SKILLS (3)	
101	Vocabulary
102	Verb Tenses
.	
.	
201	Vernacular and Nationalism
* 202	Prejudice and Regional Dialect
.	
.	
301	Reading Speed
302	Reading Comprehension
.	
.	
n	

Ⓓ

CONTEXT, STYLE, CONTENT	
01	Fiction, Literary, Prose
02	Fiction, Literary, Poetry
03	Fiction, Technical, Prose
04	Fiction, Technical, Poetry
05	Nonfiction, Literary, Prose
06	Nonfiction, Literary, Poetry
* 07	Nonfiction, Technical, Prose
08	Nonfiction, Technical, Poetry
.	
.	
.	
.	
n	

Ⓔ

LEVELS	
01	Very Low
02	Low
03	Below Average
04	Low Average
* 05	Average
06	High Average
07	Above Average
08	High
09	Very High

Ⓕ

MEDIA	
01	Textbook
* 02	Programmed Learning Unit
03	Newspaper
04	Comic Book
05	Novel
06	16 MM Sound Film
07	16 MM Silent Film
08	Hydrocarbon Model
09	Television
10	35 MM Slides
.	
.	
n	

Ⓖ

MODES	
* 01	Tutoring Drill and Practice
02	Lecture
03	Discussion
04	Recitation
05	Homework
06	Laboratory
07	On-the-job
08	Lecture-Discussion
09	Tutoring Drill and Practice-Homework
.	
.	
n	

Ⓗ

FACILITY AREAS, SPACES	
* 01	Carrel
02	Learning Resource Center
03	Seminar
04	Large Group
05	Experimentation Center
06	Computation Center
07	Design Center
08	Fabrication Center
09	Broadcast Center
10	Reproduction Center
11	Physical Education Center
12	Administrative Center
13	Food Service Center
.	
.	
n	

Ⓘ

INTERESTS	
01	Adventure
02	Agriculture
03	Art
04	Business Management
05	Law and Politics
06	Mathematics
07	Mechanical
08	Medical Service
09	Merchandising
10	Military and Civil Leadership
11	Music
12	Natural Science
13	Office Practices
14	Public Speaking
15	Recreational Leadership
16	Religious Activities
17	Sales and Marketing
18	Science-Technology
19	Social Service
20	Teaching
21	Technical Supervision
22	Writing

Ⓙ

APTITUDES, ABILITIES	
01	Mechanical
02	Numerical
03	Verbal
04	Graphic
05	Dexterity
06	Clerical
07	Spatial
.	
.	
n	

Ⓚ

PERSONALITY, TEMPERAMENT	
01	Extroverted
02	Introverted
03	Achievement
04	Deference
05	Autonomy
06	Exhibition
07	Intraception
08	Nurturance
09	Succorance
10	Change
11	Endurance
12	Affiliation
.	
.	
n	

Finally, a main trail to the ultimate objective with a set of subsidiary trails which feed into and are prerequisites for that ultimate objective,

And, a hierarchy of objectives.

Curriculum development will result in an infinite number of sterile content items on the horizon which merge one with one more, two with one more, three with one more, four with one more, etc.; or two with two more, four with four more, eight with eight more, etc.; and so on until groups and clusters of items come together and lose their individual-item sterility as they do so. The more they are interrelated, the more motivating and stimulating the learning experiences will be for the student.

The diagram on the following page represents how curriculum differentiation breaks down a domain into its subject matters, and those subject matters into their specialties, and those specialties into their basic knowledges, skills, and conceptualizations. It also provides a picture of how the domain feeds into the integrated curriculum content along with all other domains, subject matters, specialties, etc.

As said repeatedly, the source of all such differentiation is the student himself. His characteristics direct the identification of objectives, and those objectives are broken up into prerequisites and those prerequisites into still further and more basic prerequisites until the model pictured on the following page becomes reality.

Also, the integrated curriculum cluster deals with the three basic threads described earlier--mental health, personal behavior, and career development. The basic approach is the process described as inductive-deductive reasoning. The environments are psychological, social, and biological-physical. The focus is the individual student.

The key to all program planning, as well as curriculum development, is the individual student. Program planning and curriculum development (content, organization, structure) must be done mainly with the student to:

- Meet his characteristics,

- Meet his rate, pace, and style of learning,

- Open up the system to make it flexible for all persons within the Southeast Education Center,

- Challenge him,

- Motivate him,

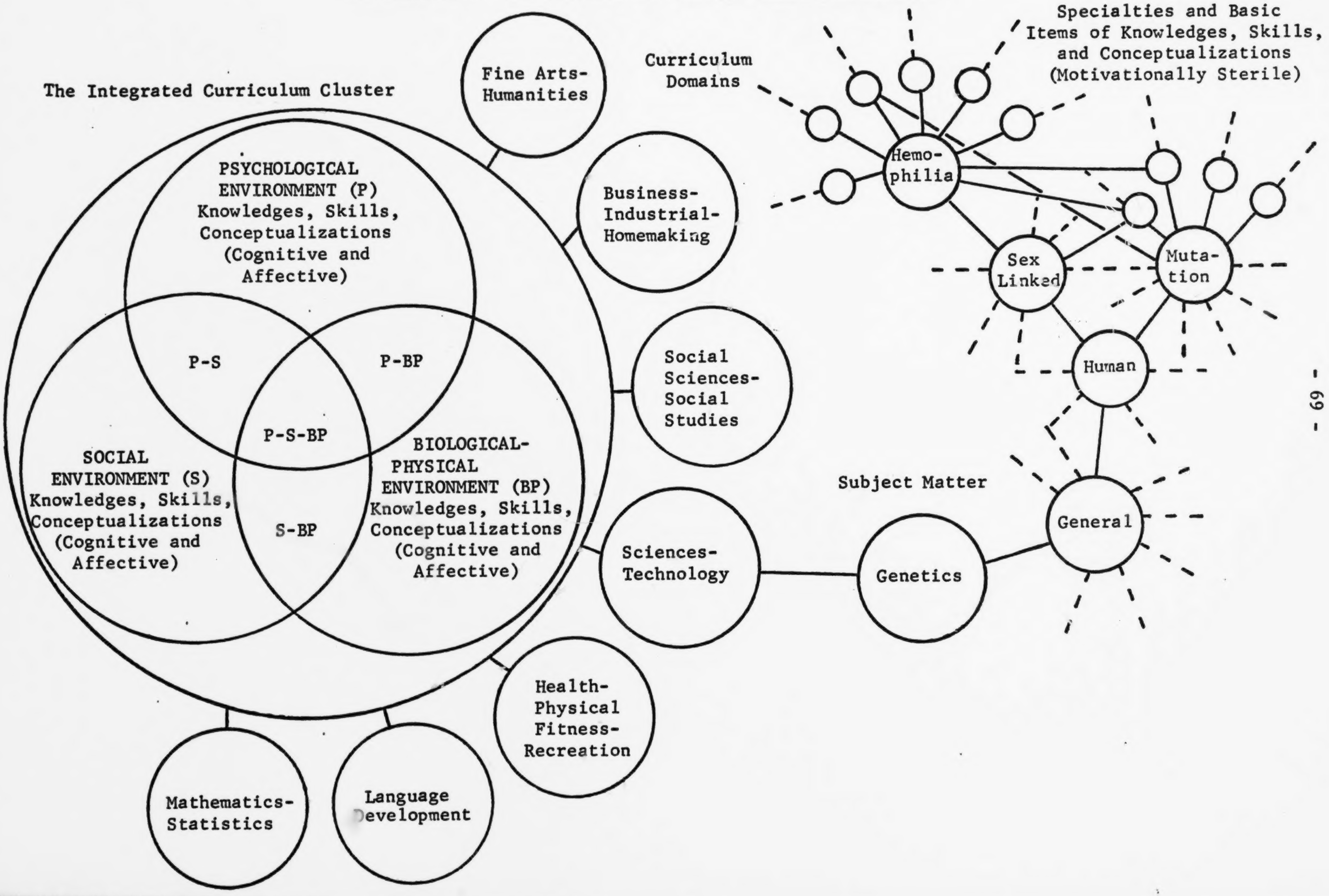
- Free the teacher for management of the total learning process and program,

- Allow for dynamic change within the system,

- Decrease materials cost to the necessary and efficient level,

- Allow for validity and reliability in researching the learning process,

AN EXAMPLE OF THE DIFFERENTIATION OF CURRICULUM CONTENT


Specialties and Basic Items of Knowledges, Skills, and Conceptualizations (Motivationally Sterile)
Curriculum Domains
The Integrated Curriculum Cluster
Fine Arts-Humanities
Business-Industrial-Homemaking
Social Sciences-Social Studies
Sciences-Technology
Health-Physical Fitness-Recreation
Language Development
Mathematics-Statistics
PSYCHOLOGICAL ENVIRONMENT (P) Knowledges, Skills, Conceptualizations (Cognitive and Affective)
SOCIAL ENVIRONMENT (S) Knowledges, Skills, Conceptualizations (Cognitive and Affective)
BIOLOGICAL-PHYSICAL ENVIRONMENT (BP) Knowledges, Skills, Conceptualizations (Cognitive and Affective)
P-S
P-BP
P-S-BP
S-BP
Subject Matter
Genetics
General
Human
Sex Linked
Muta-tion
Hemo-philia

- Bring the influence of the home and school closer together; help them work together,

- Capture the student's intrinsic reinforcers and learning contingencies,

- Increase the onset of the process-control emphasis in the school program,

- Reduce and halt the product-control emphasis in the school program,

- Reduce staff personnel costs to the necessary and efficient level,

- And, most of all, more efficiently initiate, reinforce, maintain, and generalize his knowledges, conceptualizations, and skills in his psychological, social, and biological-physical environments.

Quantification of Program Components and of Learning

An outcome of such precision will be an indexed catalog of program components (curriculum materials, media, modes) which could be used in planning learning experiences. These learning experiences will be for affective and/or cognitive knowledges, conceptualizations, and skills for each component.

There will be an indication of the optimum time unit required for each learning experience, based upon the student's characteristics rather than upon the average result for a number of students.

There will be an indication of the optimum facility space or area required for each learning experience.

Finally, and this will be the undergirding consideration for all of the above, the catalog will indicate the broad spectrum of student characteristics. It will indicate how various combinations of these characteristics require this or that combination of curriculum materials, modes, media, time units, and facility areas or spaces.

The statistical approach to this cataloging is through a combination of techniques, including multivariate behavioral research, canonical correlation analysis, multiple regression analysis, etc.

The means by which the student's characteristics will be quantified include standardized tests and measurements, interviews, questionnaires, physical observations, anecdotal records, etc.

Factor analysis will lend weight to the isolation of the behavioral characteristics in any or all of these measuring techniques.

None of this quantification would accomplish for the student any greater learning than he could accomplish on his own with his teacher by simply having a major influence on the subjects he studied and the way in which he studied them. The quantification merely is the most reliable and valid way of proving that learning by the student is going on in the most valid way.

It can lead to an efficient cost effective educational program to the degree to which it is quantified precisely. This, however, is not its intent and will not be used primarily for this purpose in the Southeast Education Center.

Its primary intent will be that of, first, aiding the educator in becoming truly a professional and, second, accomplishing sound research on learning (initiation of learning, reinforcement of learning, maintenance of learning, and generalization of learning) without having to place the student in a laboratory situation as an experimental subject.

The present system bases most of its programs on the premise that the student "grows and expands" in a spiral of knowledge. It further assumes, therefore, that all knowledge has prerequisites or basic foundations which must be mastered much in the same way as one builds a building--an analogy which sometimes is used to describe the structure of knowledge and which leads to the mistaken practice of compartmentalizing knowledge into segregated courses of study. What happens, then, is that knowledge becomes not an ever-widening spiral of understanding but a narrow and highly specialized field of investigation.

Thus, in English language arts we may see publications on usage and expression published by the same company, written on the same format, which does not extend the knowledge it is trying to pass along into other domains. It "spirals" only in the sense that the student has to go more often to the dictionary to understand the literary expressions. Much of what it had hoped to accomplish was accomplished early in the beginning and then gradually diminished because of the cyclical exposure of the student to the same format, with a different level of terminology.

It might have been more appropriate had the higher level terminology been used with one student in, for example, a grade level three or four years below the level the materials were written for, and at the same time it might have been more appropriate had the lower level terminology been used with another student in, for example, a grade level three or four years above the level for which the materials were written. Nongradedness and the total K-12 curriculum will direct this type of use. But this is not all. It would have been appropriate also for those materials to have been integrated with other subjects and curriculum domains since the main function of language development is that of aiding and increasing learnings and understandings in the general world of knowledge, conceptualizations, and skills.

Thus, the educator has assumed four stances.

First, he takes the stance that there are basic learnings which must be mastered prior to other learnings by all students.

Second, he takes the stance that such learnings can be compartmentalized into separate courses and that this leads to the most efficient learning.

Third, the educator assumes that the "spiral of knowledge" means that the level of the vocabulary must be increased.

The reason for this third stance is found in the fourth, and last, stance in which the educator assumes that knowledge per se is the key to all learning. To know means many things. Between a student and a vocabulary word, it means one thing. Between the oceanographer and the technical term oceanography, it means one thing.

But this is not all there is to learning. In these specifications leading to an over-all examination of the program to be implemented in the Southeast Education Center, the terms knowledges, conceptualizations, and skills (visual-motor-intellectual) have been used over and over. They represent three, unique, cognitive, affective, and physical entities.

Conceptualizations are taught least formally in the present school system. The focus has been on: factual knowledges first, skill development second, and conceptualizations and understandings last, and very much neglected. Where the program has placed primary emphasis upon knowledges, the student moves too quickly over conceptualizations. In many cases, even in the emphasis upon factual knowledge, the student is not exposed to those knowledges which open up for him greater understandings.

The Middle School program will expose the student to more relevant knowledges, help the student develop skills, and ultimately lead the student to conceptualizations. It will help the student to become a better problem solver, a better inductive-deductive reasoner and thinker, and a more creatively productive individual. Knowledges, skills, and conceptualizations will intertwine to meet the student needs. His needs may transcend career development, but career development is the vehicle with which he satisfies those needs.

The Science, Technology, and Art of Every Domain

The philosophy of the curriculum program will be that every domain has its science, its technology, and its art. Various subjects within each domain support this fact and receive differential treatment.

There are, however, priorities, even within this interaction. These were portrayed somewhat by the chart on page 77. While not conclusive, these priorities will establish the guidelines for further development of the curriculum domains.

It is not enough to provide learning experiences in geography, history, and economics for the student. Psychology, sociology, philosophy, anthropology, and many others are equally relevant in the domain of social sciences-social studies.

It is not enough to provide language development in German, or French, or Spanish, or even Swahili. Whatever is done in the name of language development in any or all of these languages, should be for the objective of increasing learnings, knowledges, conceptualizations, and skills in the other domains.

It is not enough to say that the student needs physical fitness training. To take the stance that individuals need such training is the same as saying the individual must be taught how to learn. Nothing could be farther from the truth and reality. The human being does not need to learn how to learn, except in a few rare instances. What he needs is to learn how to solve problems in the psychological, social, and biological-physical environments. He needs to expand his horizons of perception and insight. He needs to master himself and control his impulses and dispel his fears. His physical training holds less value for him than the present program directs, unless it aids and assists him with the more important objectives, mainly in the cognitive and affective characteristics.

Industrial education training and education is not merely for the student who cannot "hack it" in other programs or who has an aptitude for it and should take it to the exclusion of other domains. If it has value to the student, it is because the student needs it to enhance other learnings. And, as already said, it is not important because it seems, more than other subjects, to be closer to the "world of work." Occupational education studies are included in the main career development routes for the student. The curriculum domain basic to this is the social science-social studies domain, because it will be in that domain where the student discovers who and what he is and what he can be. But all domains contribute to this career development, some more than others.

Assessment of Mastery and the Reinforcement of Learning

In developing the curriculum of the Southeast Education Center, the teacher, working with the student, the student's parents, and other educators will face decisions about the structure and the writing of the curriculum. He also will face decisions about the assessment of learnings within that curriculum. He will carry out functions which involve some type and degree of assessment of attainments.

The program will direct more and more that such assessments will be mainly criterion-referenced rather than normative. It will be more important that those assessments are directly related to what is being learned, retained, and used, than that there be comparisons between what the student is doing and what other students are doing.

Grades, Carnegie units, and all other standards where used will be tied to actual and real learnings. When they are used, however, what they will communicate is what the student mastered, when he mastered it, why he mastered it, and where it took him next.

There is little logic to the present system of grading and rating. It is, for the most part, invalid and unreliable. Even its primary purpose--that of providing the student with an extrinsic motivator--is defeated because of the factors entering into grades other than actual learnings.

When grades or marks are given, they should reflect attainments in the areas of basic knowledge and provide the student with standards against which to compare himself. They will show how much he needs to learn and in what area or subjects before he can hope to master a subject, a knowledge, a conceptualization, or a skill he wants to master.

In the table on the following page, an attempt is made to show how grading or ratings apply or do not apply, depending upon whether we are talking about knowledges, conceptualizations, and/or skills. The intent here is to point out that it makes little sense to rate a conceptualization, but that it makes some sense to rate a knowledge, or a skill.

The Southeast Education Center program will be constructed to focus upon learning rather than assessment. The regular, present program is geared to subjects

CRITERION MEASURES RELEVANCY CHART
(Grades, Ratings, etc.)

Bases: What characteristics can and should be changed, through education and training, (knowledges, conceptualizations, skills).

	CRITERION MEASURES		
Subject	Relevant	Somewhat Relevant	Not Relevant
Physical Fitness		X	
Recreation			X
English Grammar	X		
English Creative Writing			X
Arithmetic Computation	X		
Mathematics Analysis		X	
English Spelling	X		
German Verb Tenses	X		
Spanish Literature Reading Speed	X		
Swahili Literature Appreciation			X
Mathematics Formulation		X	
Health Information		X	
Field Study of Algae Cultures		X	
Etc.			

In general, using the same format for estimating the degree to which criterion measures can be or should be applied to learnings, we can rate our three basic kinds of learnings as follows:

	Relevant	Somewhat Relevant	Not Relevant
Knowledges	X		
Skills		X	
Conceptualizations			X

Meaning that it is easier to apply criterion measures against the learning of knowledges than it is against the learning of skills, and even more difficult to apply them against conceptualizations.

and credits in such a way that all students are working toward a common goal, all at the same time, and all with the same materials. The final goal often is a grade. And the measure for that grade is a set of examinations, usually called midterm and final.

Important weaknesses in the present system are, first, group paced opportunity for learning; second, the use of assessments which are separate from the learning materials and curricula content; and, third, the philosophy of assessment which emphasizes factual knowledge and certain intellectual skills foremost and places opinion, judgment, and inductive-deductive reasoning secondary in the program. The problem of cheating is directly related to these.

The program envisioned for the Southeast Education Center will remove the incentive to cheat by focusing the program on the use of opinion, judgment, and the inductive-deductive reasoning processes. Conceptualizations which grow out of such processes are less relevantly assessed and rated because they represent more than any other type of learning the crucial and personal learnings for a given individual student.

The student already has most of his skills by natural development. Perhaps they can be polished up, and this the program will attempt to do; but it will not focus on initiating skills which are not there at all, or are there in a small degree. Ratings hardly apply to them as much as they do to the less abstract, less maturation-and-physical-development-oriented learnings, and this brings us to the last result of learning.

Knowledges, more than any other learning, are subject to change. As such, they are criteria oriented. The student must know what those criteria are and to what degree he needs to achieve them. In this case, even grades such as "A," "B," "C," etc., can be used but only if they indicate with as much precision as possible the level of attainment the student will have to reach to earn them. The student will need to know how much, how many, when, where, etc., before he starts a learning experience or else such grades and ratings are useless for reinforcing, maintaining, and generalizing learning.

Grades, credits, awards, and other reinforcements for behavior will be used to compare the student with himself, and never with any other student.

In the following analysis of each curriculum domain, the intent is to list and explain certain unique aspects of each domain.

Unique Subject Matters of Each Domain

Each curriculum area will have unique subject matters which it contributes to the over-all learning of a single student. Some of the areas, in addition, have basic skills which they contribute to other learnings. For example, language development contributes to skill learnings in reading, writing, speaking, and listening. The reading is not only of words but, also, of numbers, signs, and symbols. The student will need to write, speak, and hear those letters, words, phrases, sentences, paragraphs, chapters, numbers, formulas, and equations.

In each curriculum area there are basic skills which every student will, at some time during the years he is in formal schooling, need to master. Those basic skills may be mastered by one student once and for all early in his schooling, and he may not need to deal with them ever again, while another student may not master those skills until late in his schooling.

Still another student may need to go through periodic retraining in those skills to maintain them throughout his schooling.

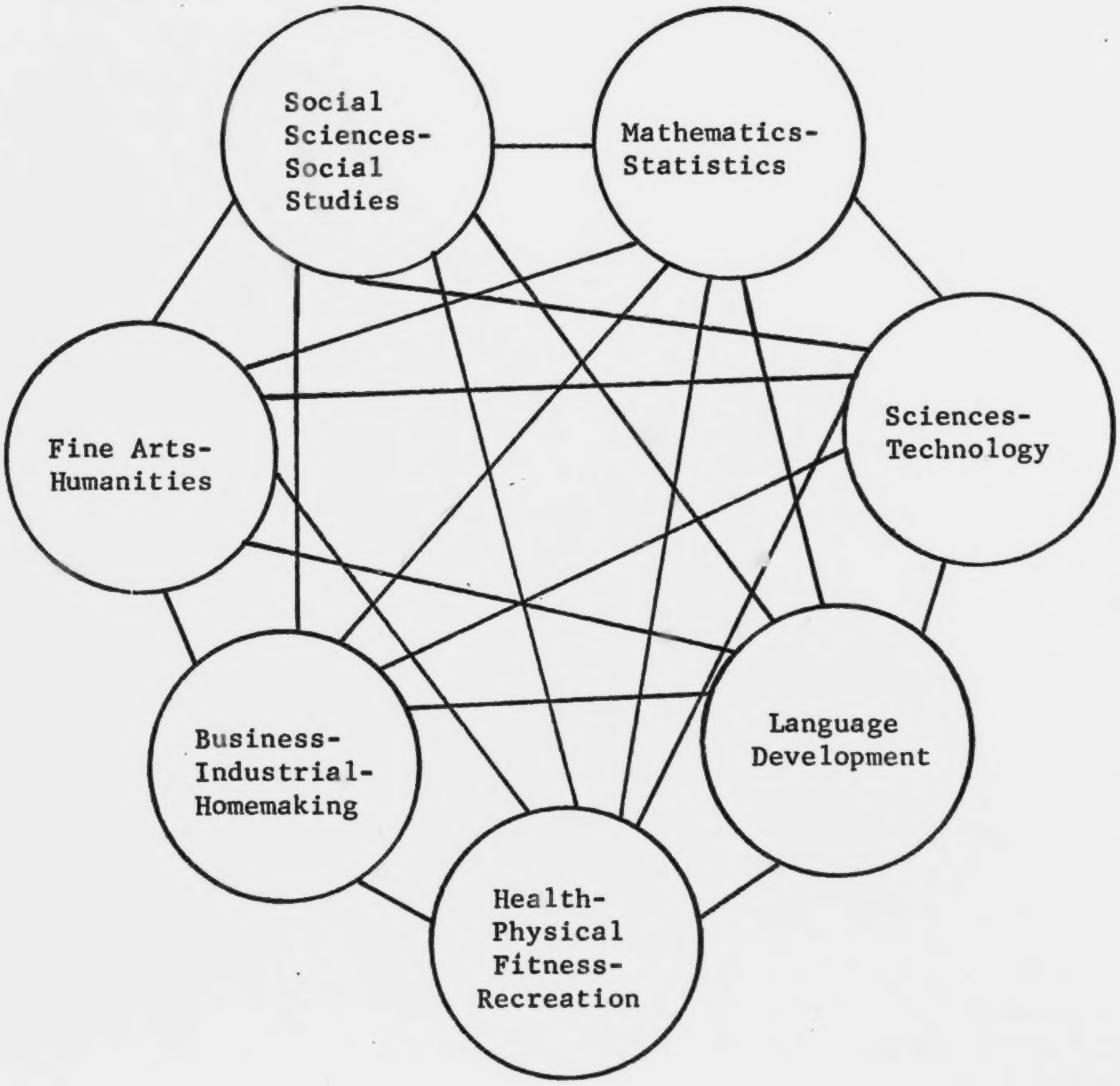
Another student may not need any formal training in those skills at any time during his schooling--he may have acquired them elsewhere.

Skill development and training, however, provide the tools which the student will need in the more crucial and personal learnings, mainly conceptualizations.

The acquisition of such tools is a primary but not the ultimate goal of the Southeast Education Center's education and training program.

The student will have opportunity when he needs it to pursue the initiation, reinforcement, maintenance, and/or generalization of those basic skills. In the whole process he will need an evaluation program which provides him with *feedback*, *motivation*, and *education and training* so that his skill development proceeds smoothly and efficiently. That evaluation program will assess his learnings and be built into the total curriculum content. It will be personal and crucial to his learnings and to himself. No other student will benefit from knowing where another student is in his learnings, because no two students will have the same type and degree of learnings at a given time. And the assessment of basic skill development, once it is done, is over. It told him what he would have to learn and to what degree before he could advance to other learnings.

AN EXAMPLE OF THE OVERALL INTERACTION OF THE CURRICULUM DOMAINS IDENTIFIED IN THIS DOCUMENT


Social Sciences-Social Studies
Mathematics-Statistics
Sciences-Technology
Fine Arts-Humanities
Language Development
Business-Industrial-Homemaking
Health-Physical Fitness-Recreation

The Web of Knowledges, Skills, and Conceptualizations in the Psychological, Social, and the Biological-Physical Environments Within Which the Individual Student Interacts to Solve Problems, Accomplish Tasks, and Develop Himself for the Future Careers He Faces.

1. Social Sciences-Social Studies

This domain, as much as any, is related to most of the problems and tasks the student will face now and in the future. It is the one domain which, when properly administered, ties together all other learnings for the good of the individual. It is the one closest to career development.

If the student fails to achieve the utmost in the knowledges, conceptualizations, and skills this domain offers, he will not reach his potential in any of the other domains.

To set this domain apart within the over-all program would defeat its real purpose and diminish its main value for it is a domain which lends itself well to the task of providing a matrix or framework upon which to hang other domains and their learnings. This framework has previously been described as the process with which the student will learn to reason inductively and deductively. This comprises a matrix of knowledges, conceptualizations, and skills which can be absorbed into the matrix according to a definite plan of organization.

The student will, because of this area of study, learn about the intrapersonal processes which make him unique from other individuals.

He will learn about the aptitudes, abilities, interests, personality temperaments, needs, intellectual-visual-motor skills, knowledges, conceptualizations, and other characteristics he possesses.

He will learn how his experiences within the real world are absorbed psychologically.

He will learn how his characteristics direct his perception of the real world and how, in turn, his behavior stems from those characteristic-based perceptions.

He will deal with the affective and cognitive characteristics of other humans and will learn how those characteristics direct those other individuals' ideas, conceptualizations, and works.

He will learn how the characteristics of individuals draw them together in social, political, occupational, and/or economic group.

He will learn how, even within groups of individuals with some commonality, the characteristics of some individuals place them as leaders of the group and place others as followers.

He will learn about manipulation among individuals as a protection against malicious manipulations and unreasonable exploitation. He will learn about the psychological games individuals play with other individuals in this manipulation.

Social psychology and sociology are sources of formal and informal learnings for the student in this domain. Personality and learning theory, group dynamics, theory, political science theory, economic theory are the foundation areas.

Man's history (physical and cultural) is not to be ignored in this domain, but it will be dealt with as one of the mysteries that the advance of knowledge and conceptualization will gradually reveal.

This domain, then, offers the student a guide to his other learnings. The "knowledge explosion" can be understood better through this domain, because the student can learn that there is no overwhelming expansion of knowledge, that it all distills down to what amounts to an unraveling of the mysteries of the environments within which the student exists. Old knowledge becomes irrelevant and is relegated to historical archives, because it now no longer has a place in the matrix of all learnings. The student no longer needs it to solve his problems and accomplish his tasks.

This domain will help the student set priorities for himself and to measure priorities of other individuals with whom he associates. It will help him make the value judgments which are essential to his survival and to the survival of his society.

To learn about himself, about groups, and about his relationship to and within groups, the student will spend more of his time in seminar-size or small group activities. In this type of grouping the interchange between and among individuals helps the student develop conceptualizations about himself, about other individuals, and about groups. An equal amount of time will be spent in independent study, including a considerable amount in the Learning Resources Center where he will examine historical books, documents, and other related publications to obtain lower level conceptualizations and the knowledges and comprehensions which their publications provide.

In the final analysis, the student will learn about formal and informal aspects of psychology, sociology, anthropology, economics, political science, and even the sciences, mathematics, and related professions as they apply to conceptualizations about man as an individual and man within the group.

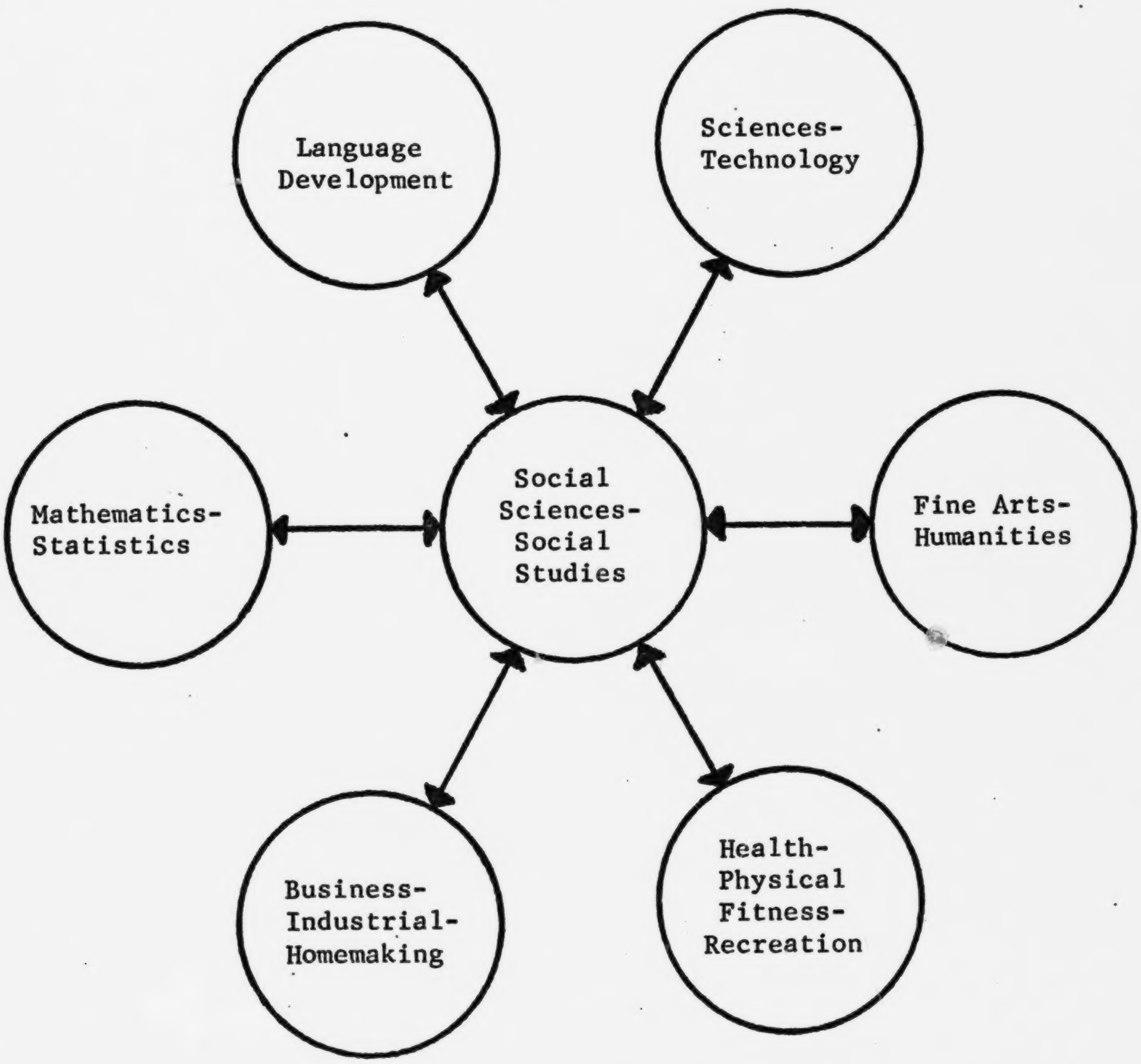
Study in other formal and/or informal subjects or curriculum areas will support his advanced conceptualizations about himself as an individual and about himself as a member of a group. He will learn of the applications of these subject areas in functions such as education, social service, business management, politics, and government.

He will learn about groupings of persons and about competition between individuals, within groups or individuals, and between groups. Analysis of aggression, conflict, and competition will draw from learnings about emotion, motivation, perception, sensation, and related behavioral aspects.

Such learnings will occur in the General Learning Area, in small groups, and at the student carrel. It will occur in the Experimentation Center and in the behavioral science studies with subhuman species of animals; such as, rats, mice, pigeons, etc. It will occur in the Computation Center when the student does statistical analyses of data he collects on those experimental studies. It will occur in the Performance Center when the student and other students simulate social, political, economic, and other situations through drama and role playing. It will occur in the Design Center when the student learns firsthand about the effects of various textures, hues, shapes, shades, etc., of the fabrics and materials he works with in constructing objects for use in other areas. It will occur in the Physical Fitness Center when the student releases tension and anxiety through physical fitness exertion. In other words, it will occur wherever the student is psychologically, socially, and biologically-physically involved with himself and with others.

1. Social Sciences-Social Studies

The integration of the other curriculum domains


Language Development
Sciences-Technology
Mathematics-Statistics
Social Sciences-Social Studies
Fine Arts-Humanities
Business-Industrial-Homemaking
Health-Physical Fitness-Recreation

2. Language Development

The verbal, quantitative, and abstract nature of virtually all parts of every other curriculum domain places a primary focus upon language development.

The Middle School program in foreign and native language development will direct the student toward activities which relate more than in any other curriculum domain, to his own level of readiness, motivation, capacity, ability, and interest.

The communication skills and/or arts which draw from language development include reading, writing, listening, speaking, and utilization of the mass media. In the Middle School, as at all levels, they will be integrated as parts of the total communication program. They will be also integrated with other curriculum domains so that the relevance of communication skills and arts to those other domains is continuously reinforced. There is no way to separate the communication skills and arts from learning and instruction in any of the other domains.

The focus in language development is threefold: verbal language, numerical-quantitative language, and abstract language; its context is both native and foreign.

In developing verbal language, there will be an early concern for providing readiness development programs for those students who obviously need them. Those programs not needed by the student will be bypassed.

In developing quantitative and abstract languages, there will be an early concern for exposing the student to basic symbols used in numerical operations, formulas, graphs, charts, etc.

In the discussion below, the emphasis will be upon verbal language only, because this is the major component of language development. However, what will be described may just as easily apply to language development in numerical-quantitative and in abstract languages. Reading, writing, speaking, listening, etc., skills are as vital to these two languages as they are to the verbal language.

Development of all three languages will go on in the carrel area, in the small group seminar area, in the Computation Center, in the Broadcast Center, in the Performance Center, and wherever language *per se* is a key to other learnings.

In the Broadcast Center, for example, as much learning in language development will occur when the student gives the daily stock market quotations as when he participates in a radio drama.

In reading, the individualized instruction dispenses with readiness programs for the early readers and allows them to move into actual reading. On the other hand, where learning to read is temporarily blocked by a psychological and/or physical deprivation and where the correction for this handicap requires a broader base of experiences for the student, then these experiences will be provided. At times these experiences may move away from formal reading instruction toward the use of the other senses in learning. Materials for this student, nonetheless, will be designed to erase the reading handicap and ultimately help him to become a more proficient and interested reader.

The key will be motivation, and an important key to motivation will be the relevance of the reading materials. This means that in the Middle School the materials of other curriculum domains may well be the appropriate reading materials in language development. If the student has a natural tendency to read writings in science, his readings may be in science, but at the same time he will learn how other domains have contributed to the thought and writings of scientists. This will be done with a reinterpretation of those other domains to make them relevant. If the student reads for the most part, or is interested in, nonfiction trade works in popular mechanics and so forth, then his studies in reading will be related to those types of writings and publications. As closely as possible, the student's materials in reading, then, will be integrated with his developing trends of interest, ability, capacity, skill, and mastery. At no point will he be completely isolated from other writings, including the classics, when they are relevant. He will be exposed to them for what they contribute to his reading needs.

There are three basic reasons for having any language development program. They are, first, the development of lasting and creatively productive interests in language; second, the development of fundamental skills for the independence in language usage; for example, word perception and recognition; and, third, the development of inductive-deductive reasoning as the basic step to understanding or comprehending what the student reads, speaks, writes and hears. It is anticipated that this reasoning process will lead the student to reading more critically, but his readings should also reinforce his skill in this reasoning process.

In reading and writing, the student will be directed toward activities which show him what it is to be an author, whether his works are in poetry, literary prose, or technical writings; whether his works are primarily fiction or nonfiction. His learnings in the writing skills of spelling, grammar, and usage are dependent upon his need to know and use them. In spelling, emphasis will be placed on spelling words that the student uses or on new words that occur in connection with new subject matter which he will pursue. This means that learning in spelling will draw heavily from word study-vocabulary development and reading, as well as writing. New words encountered in reading or needed in writing should lead to the dictionary, to the thesaurus, to the books of word spellings, and then to use by the student in his own speech and writing. If the student is learning a foreign language, English spelling can often be traced to forms in the language from which the word was taken. Also, word origins from the old English are excellent examples of how the Middle School program in language development can be truly individualized since this approach can capture the attention of many students with ties to the old country, or with particular abilities in linguistics, or with interests in ancient origins and history, per se.

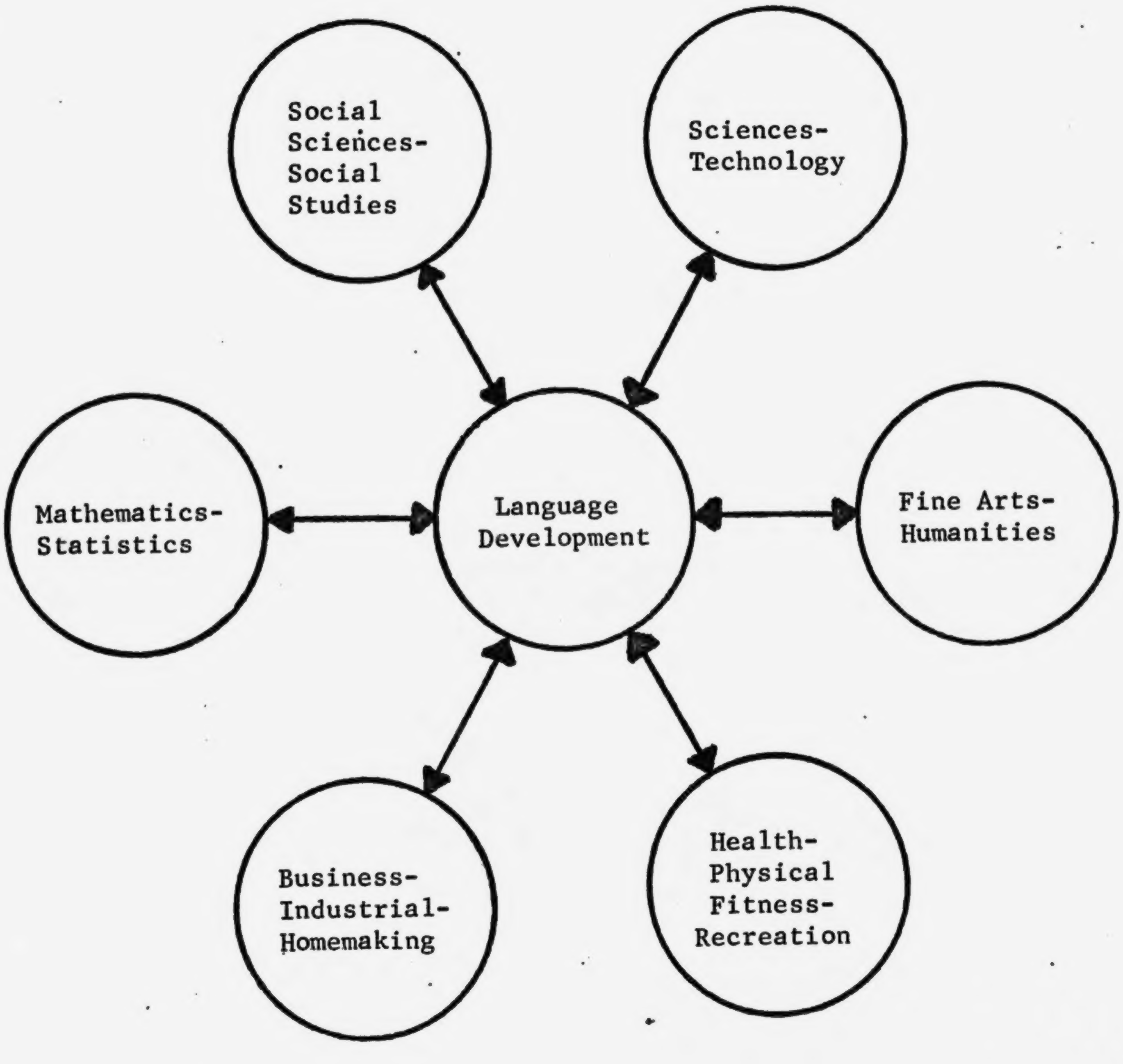
In grammar and usage, one key factor is habit. It not corrected at the primary level, the Middle School programs will correct improper language usage and grammar habits. Usage-and-grammar expression is more habit than reasoning. If and when correction is necessary, the emphasis will be upon the most effective and least emotional way of helping the student learn and practice the right form. There are many reasons for this, but the most important one is that the Middle School program in language development will accept a student where he is as much as possible and will try to motivate him toward self-improvement.

In speech and listening, the program of the Middle School will range from correcting mechanical speech defects to developing self-confidence in speaking before groups and with individuals. Through speech and listening activities, the student will be pushed toward his intellectual limit and psychological readiness in speaking, vocabulary, sentence structure, and speech pattern. Emphasis will be as much on self-expression in groups and with individuals as on the speaking voice, intonation, and delivery. In the Middle School the emphasis will be on developing the confidence to carry on discussion, lecture, or lead committees. The student's work in speech and listening will draw heavily from relevant studies in other areas; such as, studies of the lives of great men in the field of science, mathematics, engineering, law, government, art, music, theology, social science. This will help him understand that speech and listening skills and arts have handicapped and/or aided others preceding him, even the most visible personalities in history. The emphasis, as always, will be upon the individual student's need to feel that he has as much to contribute within and to the program of the Middle School as anyone else.

Mass media, such as television and radio, will be used in the Middle School program to reinforce the student's skill in reading, listening to, and speaking the relevant verbal, numerical-quantitative, and abstract languages, whether in printed, graphic, or tabular form. Learning to do so by broadcasting news stories and music will be one of the Middle School opportunities. In addition, the student will have occasion to write programs for these media. He will learn how professionals in the communications industry work by visiting them where they work and by being involved closely in the school in such activities.

2. Language Development

The integration of the other curriculum domains


Social Sciences-Social Studies
Sciences-Technology
Mathematics-Statistics
Language Development
Fine Arts-Humanities
Business-Industrial-Homemaking
Health-Physical Fitness-Recreation

3. Science-Technology

The Middle School program in science is designed to direct the student toward activities which relate the inductive-deductive reasoning process to the sampling, analysis, and interpretation of observations in controlled studies of the actions, reactions, and interactions of organic and inorganic matter.

He will learn that science is a method of investigating phenomena and not a product of that investigation. It can be shown how the cyclotron, the Salk vaccine, the atomic bomb, nuclear fission, and toothpaste resulted from some type and degree of science research. He will learn how important the inductive-deductive process is to the scientist, to the technician, and to the community at large.

The student will be exposed to one topic and concept at a time and will be well grounded in it before he moves to the next. As much understanding of the "scientific method" can occur with limited curriculum content as with hundreds of topics. His learning should replicate the scientific method in that it should build for him an understanding of how small bits and pieces fit together in the end in some type of trend that can be quantified.

The student will learn to become an observer who, placed in a system, notices where very other subject in the system is at all times. He will learn at this time that the primary function of observing is merely to observe, not to wonder why something is happening. Later the student can piece together his observations into trends about which he will wonder and hypothesize. The ability to separate observation from interpretation and the realization that different observers see different meanings in the same objects, events, and processes are key concepts in science. The student must learn these as well as learn or memorize knowledges and facts about scientific and technological discoveries.

In addition to teaching concepts that build one upon another, an essential procedure of the Middle School science program will be to expose the student to science and technology as though he were a scientist and technician. A major requirement of any school program is that it identify and encourage specialization. This is more true of science and technology than other fields since technology, science, and the measurement fields will play a significant role in future society through the extension of their methodology and technological processes and products.

Thus, the student will be placed for much of his school experience in special learning centers (laboratories) where he will be shown how to, and even be able to, apply the inductive-deductive reasoning steps to the study of actions, reactions, and interactions.

There are other areas which reinforce this goal and are relevant to science study; such as, the Design and Fabrication Centers where the student can construct materials for use in his science studies.

There are also other ways of reinforcing science learning; for example, the study of the two-year salmon cycle can lead the student into fisheries biology, economics of fish canneries and sales, Pacific Northwest Indian culture, anthropology, geology, and art. Demonstration and practice are the primary ingredients of the actual science program, and these are accomplished primarily in laboratory experiences.

In addition to laboratory-type activities, the student will spend time in independent study of science-technology and in small-group seminars exchanging ideas and products with other students, assisted by competent educators and aides. When there are guest speakers in the area of science-technology or in areas related to the student's studies, or when there is a need to view a particular film that can be most economically shown to large groups, the student will engage in large-group activities in science.

The ultimate objectives of the science-technology program will be to instill in the student, first, a skill at the inductive-deductive reasoning process (the scientific method); second, an awareness of the role and function of scientists and technicians; and, third, an awareness of the interrelatedness of all knowledge based on that reasoning process.

Where the social science-social studies domain will be the vehicle with which the student integrates all of his other learnings for the sake of personal and career development, the science-technology domain will be one important, if not the most important, domain for educating and training the student for careers of the future. In this domain, as much as in any, it is probably true that there is hardly a field of knowledge and conceptualization, as well as of skills, that does not draw from science and technology.

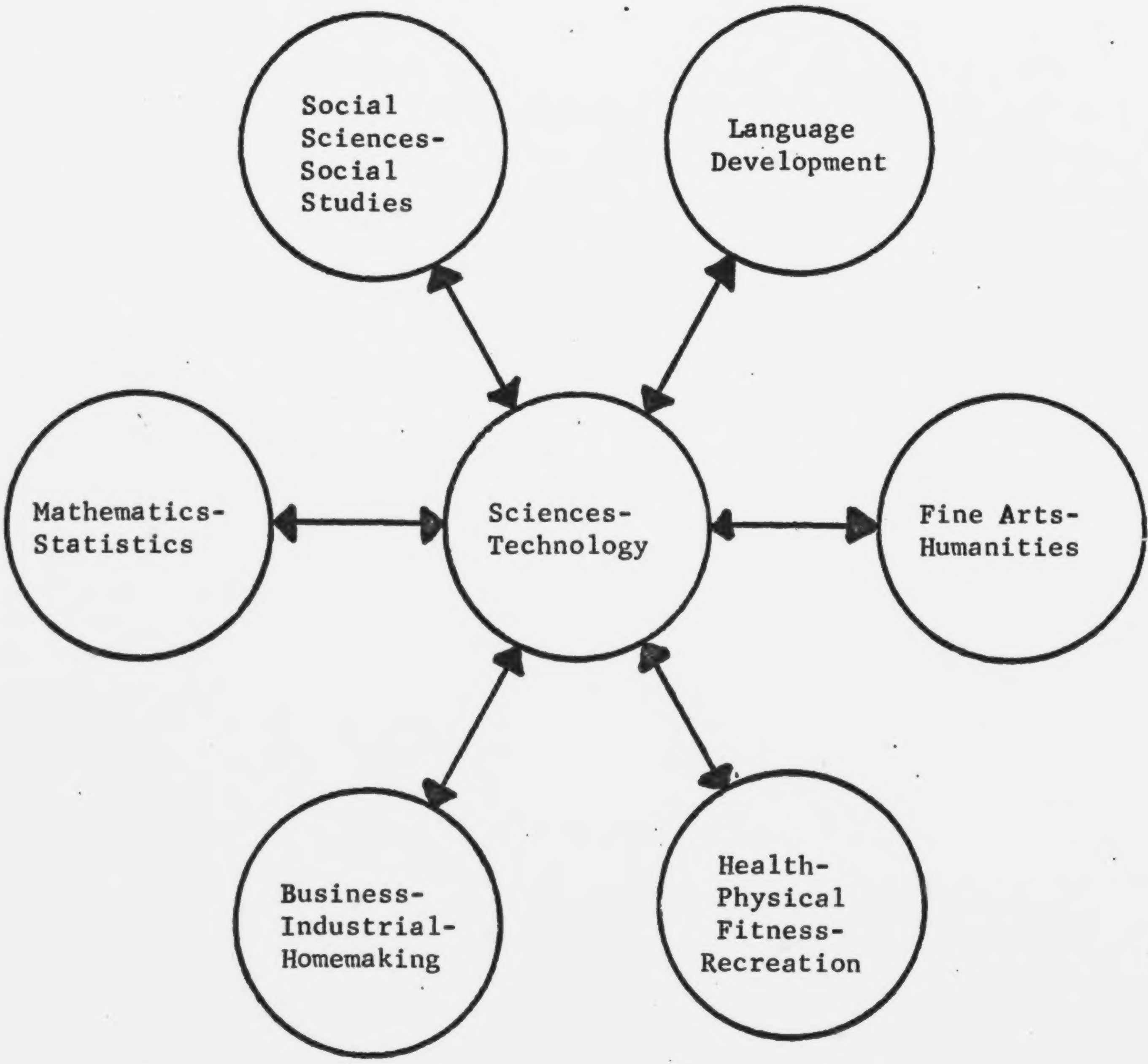
Technology results from what science uncovers as basic knowledge and conceptualizations. As such, the program in the Center and in the Middle School will open up for the student experiences with the botany, zoology, chemistry, physics, astronomy, atmospheric, lithospheric, hydrospheric, interdisciplinary, and last, but certainly not least, behavioral sciences. It will afford him experiences with engineering and engineering-related subjects. In conjunction with industrial studies, it will afford him experiences in repair and construction applications to and from science and technology.

The objectivity emphasized through science learnings will carry over into other areas to the degree that those other areas direct. Law and jurisprudence draw heavily from such objectivity. Business management depends somewhat heavily upon such objectivity. Statistical analyses via the stored program, digital computer rely upon such objectivity, as well as upon precision in mathematics, as well as upon thorough language development.

Thus, science and technology learnings are hardly unrelated to other learnings, and the cross-fertilization inherent in the Middle School program affords tremendous possibilities for the student.

3. Science-Technology

The integration of the other curriculum domains


Social Sciences-Social Studies
Language Development
Mathematics-Statistics
Sciences-Technology
Fine Arts-Humanities
Business-Industrial-Homemaking
Health-Physical Fitness-Recreation

4. Mathematics-Statistics

The Middle School's mathematics-statistics program will provide experiences which, first, teach the measurement processes and techniques involved in the inductive-deductive reasoning processes; second, demonstrate what a mathematician is and does; and, third, relates learning to problems the student has to solve in other activities in and out of the school.

Mathematics as a communication medium will be taught in such a way that the student will learn to be precise and logical in his communications.

Among the kinds of topics the student will be exposed to early in his learnings will be other ways of communicating; such as, with the 24-hour clock, the metric system, and the revised calendar.

Mathematics will be built around the student's own activities so that he will learn that the domain is not merely one of counting, measuring, or manipulating formulas but is a way of thinking, a curriculum domain that has a history of dynamic changes and exciting new discoveries.

The student will be exposed to mathematics as a formal way of taking samples or observing, analyzing those samples and observations, and interpreting those analyses. He will learn how mathematical discoveries have grown out of functional needs for precision in sampling, analysis, and interpretation.

All of this will be accomplished through an approach to mathematics which extends prior learning, as well as reinforces learning in other curriculum domains.

In the Middle School the trend toward applying mathematics as a specialty or as a related curriculum domain to other specialties will proceed from basic measurement facts and concepts, such as that of the four kinds of measures--nominal, ordinal, interval, and ratio. Basic knowledge and application of these four concepts will have occurred in the K-4 schools, but in the Middle School they still constitute groundwork for other concepts in mathematics. The language development in numerical-quantitative and abstract languages which is required for mathematical-statistical learnings will have occurred early in the student's program and will receive attention in the form of maintenance throughout his school career.

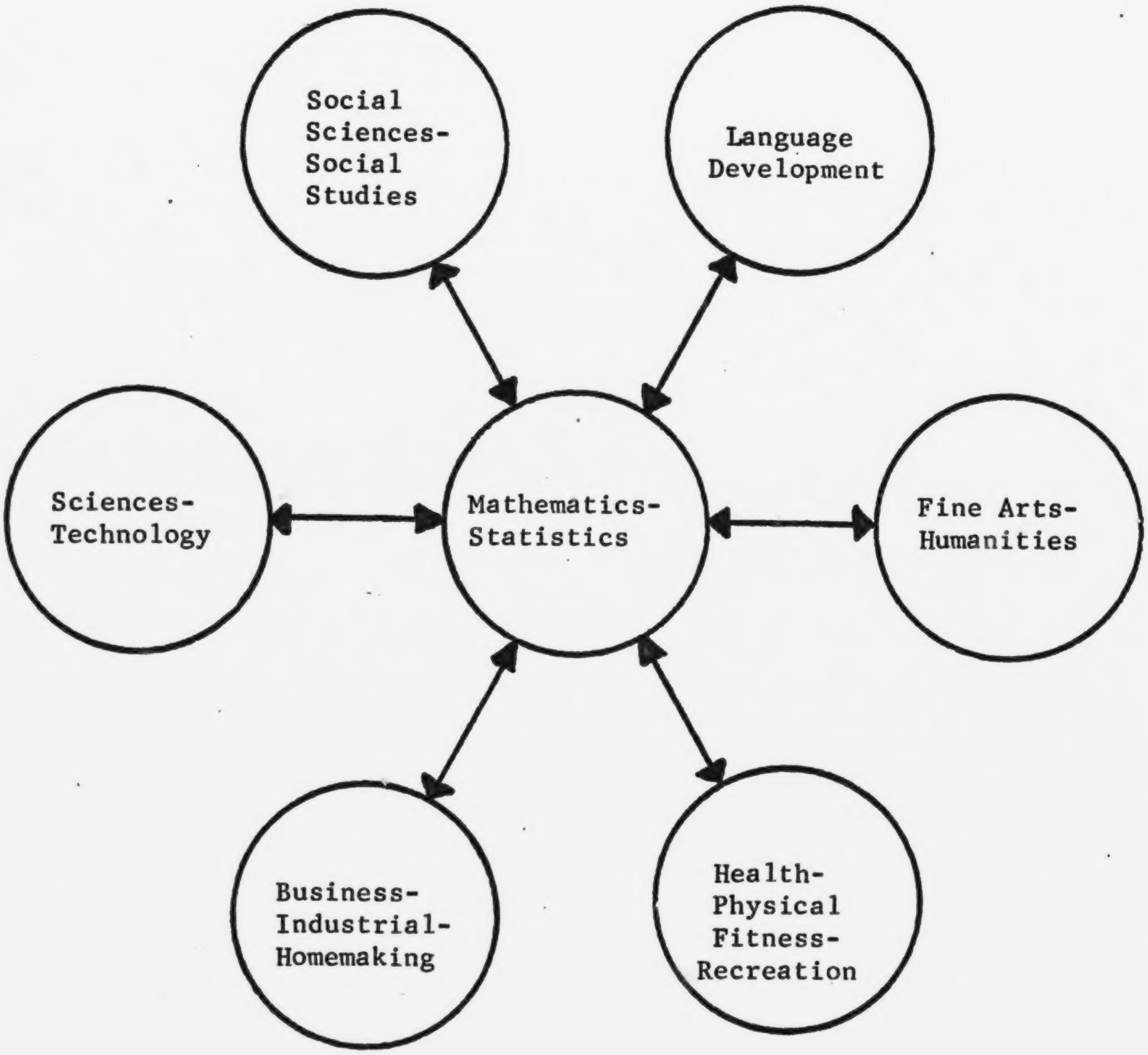
Although mathematics is not the basic field out of which the actual stored program of digital and the analog computers was developed, it is the basic field out of which the theory and languages of these digital and analog computers was developed. This theory and its extensions will be recognized in the Middle School, and the application of computer science and technology to measurement problems in other curriculum domains will be stressed. The on-site computer will serve a third function in addition to "computer-aided educational management" and "computer-mediated instruction." This will be to teach computer science and technology theory and practice, to teach programming and data processing, and to show its use in a variety of fields and curriculum areas.

More than in any other domain, the student's learnings in mathematics-statistics will be geared with extreme care to his eagerness to pursue them. When the student backs off psychologically from the program and if the student is "over his intellectual and emotional depth," then the program will drop back to a former level, will allow the student to drop the study, or will seek other reinforcers for his mathematics learnings.

The abstract nature of this numerical-quantitative domain is such that the greatest learnings can and will come as the student "feels" the need for them. Oftentimes the student will learn more about analytical geometry and calculus by becoming first interested in and first pursuing probability and statistical theory. He may have become interested in and may have pursued probability and statistical theory because earlier experiments may have required the collection of, and treatment of, data to statistical analyses; such as, t-Tests, analysis of variance, and so forth. The student may have gone into calculus because of a real interest and a need to know more about curve fitting, etc. From such studies, the student may even go back to earlier learnings in algebra, solid geometry, and trigonometry. This is the purest form of learning and will be as possible in mathematics as it will be in other domains.

4. Mathematics-Statistics

The integration of the other curriculum domains


Social Sciences-Social Studies
Language Development
Sciences-Technology
Mathematics-Statistics
Fine Arts-Humanities
Business-Industrial-Homemaking
Health-Physical Fitness-Recreation

5. Fine Arts - Humanities

The program in fine arts and humanities is designed to direct the student toward activities which, first, allow expression for the sake of developing new relationships and insights; second, allow expression and direction for creative energies; and, third, expose him to pre-career development ideas, materials, processes, tools, and techniques in art, music, dance, drama, and sculpture.

This domain will expose the student to experiences which lead him, with his capability for abstract reasoning, to become, one, more open to experience; two, more flexible in the ideas he accepts, accommodates, and assimilates; three, more fluent in the ideas he generates after being exposed to an experience; and, four, more persistent in producing what his thoughts and feelings reveal to him.

Experiences in the fine arts and humanities, as with other domains, can increase the sensitivity of individuals to the world around them. Ideally, all curriculum domains have this potential. The Southeast Education Center program will focus on developing this potential while at the same time removing the barriers to creative interpretations of experiences.

This domain, more than any other, may help the student to discover that mind and hand can be creative, skillful, useful, and valuable. Another domain may show the student that weaknesses are sometimes springboards to strengths. Yet another may point to small, microscopic events, processes, objects, and organisms, and in so doing show that no matter how small something is it conforms to the same natural laws.

The contribution of fine arts and humanities to the other curriculum domains is mainly in the challenge to the learner, first, to open up to ideas; second, to accept a variety of ideas; third, to release ideas of his own; and, fourth, to create products and processes from those ideas. Other domains have this element of creativity, but while their mode is primarily convergent, arriving at a "right" answer, the mode of fine arts and humanities is primarily divergent, requiring different answers. Herein lies the value of fine arts and humanities.

The Middle School program will be designed to make possible the transfer of this divergent thinking and production, typical of the fine arts and humanities today, to other areas. As educators recognize the significance of divergency, the fine arts and humanities will make an impact which is not isolated and limited to art, music, dance, drama, and philosophy.

However, none of these areas need be divergent in its approach to learning. Simple, routine, structured exercises can reinforce convergent thinking and production if they are focused upon directing the student's attention to the processes followed by professionals. In art, the student may be asked to construct his own materials, tools, and equipment and in this way increase his sensitivity to the works of art he will create. The student will persist through to the solution of his own problems and subject his work to his own critical evaluation. Beginning with the construction of the basic tools he uses, the student will arrive at his own syntheses, organization, conclusions, and products.

Art will not be viewed as a program of busy work for slow students who have difficulty with verbal and quantitative subjects. All students gain from art experiences, and the program will keep this fact foremost in its efforts.

Art

The student usually will have a program which will include both creative and correlated activities in a variety of subjects and curriculum domains. The student will have planned art experiences which include, first, perception training, form, color, design, size, and space orientation; second, experimentation with different media in two and three dimensions; third, consideration of art in daily living; fourth, the beginnings of art history; fifth, the development of esthetic artistic judgment in personal life; sixth, the planning and completion of art projects with specific attention to self-evaluation; and, seventh, the development of skill in presenting ideas visually. Career development in a variety of fields may rely heavily on art experiences even though emphasis in the Middle School will be on pre-career development. Architecture; interior design; ceramic, civil, and other engineering fields; and industrial design are related areas in which art concepts apply.

Music

Music will not be limited in the Middle School to vocal and instrumental performance. It will also include programs in listening and in composing and lead to sensitivity towards, and awareness of, musicians and music in relationship to other curriculum domains and subject matters. A student may be exposed to experiences in music for any or all of the following objectives: first, a growing familiarity with important music of all periods and styles; second, increasing understanding of the structure of music; third, knowledge of characteristics distinguishing music of one period from another; fourth, understanding of the orchestra and its instruments; fifth, knowledge of the most significant characteristics of the major forms of music; sixth, understanding of the role of music as a medium of communication in history and the function of music in contemporary life; seventh, knowledge of the scientific and the mathematical bases of music; eighth, knowledge of the relationship between significant musical, artistic, and literary works; ninth, realization that music is expressive of intrinsic values and increasing the student's self-identification with both music and those values; tenth, recognition of the values distinguishing artistic music from music which is merely entertaining; and, eleventh, increasing the student's knowledge of critical works and reference sources for music. There will be stress upon creative expression and invention with sound. The student will discover music, invent sounds, write music, create physical rhythm, movements, and skits.

Dance, Drama, Philosophy

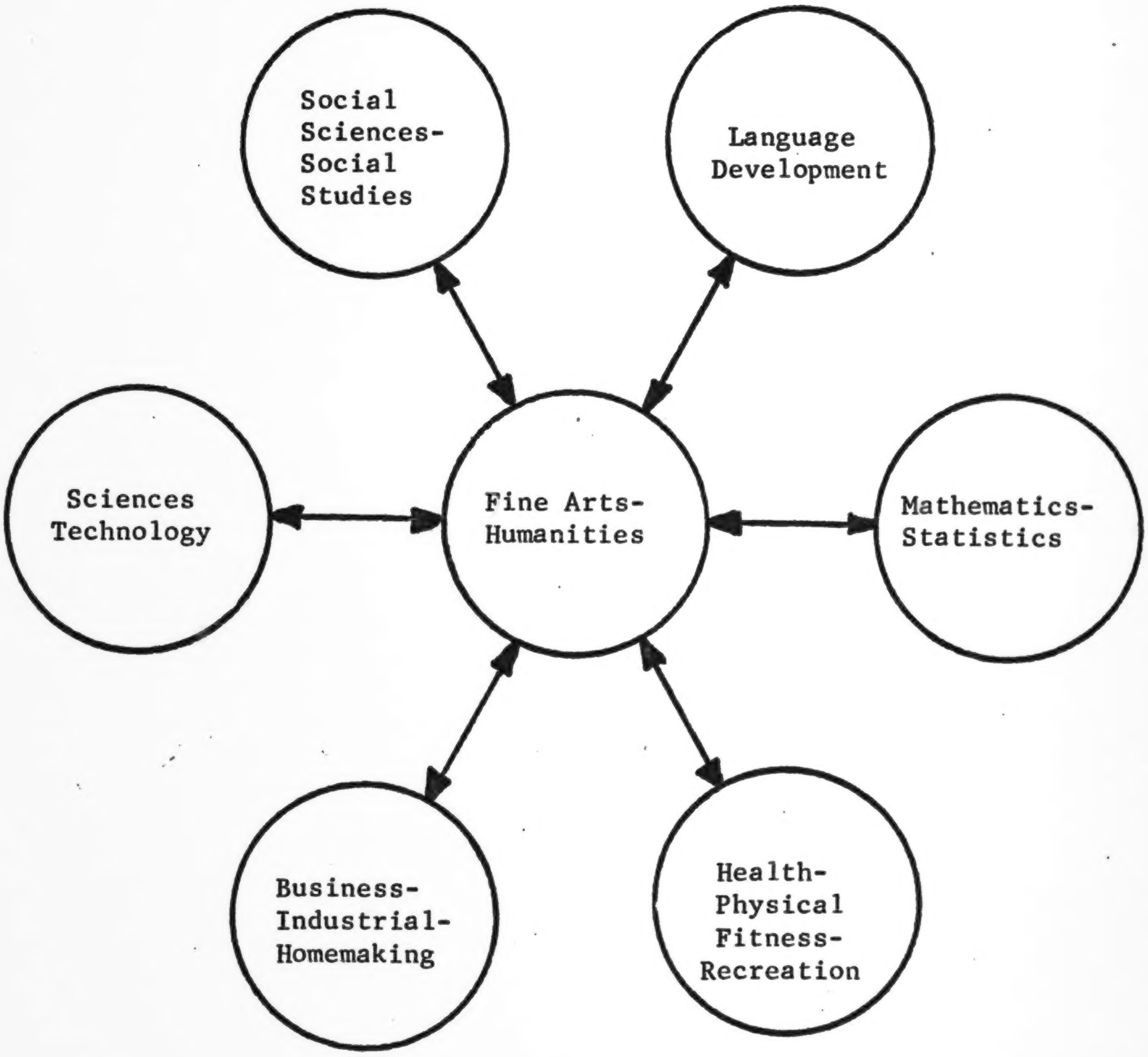
Dance, drama, and philosophy, and elements of creative writing will have much the same focus as art and music. In every student's case, the focus will be on his needs, and every attempt will be made to help the student find value in all subjects through being permitted the freedom to extend his knowledges, skills, and conceptualizations through all curriculum domains.

As an adult, the student's involvement in the arts and humanities will be mainly as a spectator. He will not always play an instrument, or perform on the stage, and much of his learning, other than actual performance, especially in dance, drama, and music, will be through audience participation and observing.

Just as participation in athletics and sports is for most students mainly vicarious enjoyment as a spectator at games and events, so enjoyment in fine arts will for most students come mainly through observing others. However, the student will need to understand what he observes. This need will be uppermost in the program.

5. Fine Arts-Humanities

The integration of other curriculum domains


Social Sciences-Social Studies
Language Development
Sciences Technology
Fine Arts-Humanities
Mathematics-Statistics
Business-Industrial-Homemaking
Health-Physical Fitness-Recreation

6. Business-Industrial-Homemaking

The Middle School program in this domain focuses upon pre-career specialization experiences in each of these three areas.

In business training and education, the student will be exposed to the learnings he wishes in office typing, clerical and management skills, and in the production, sales, marketing, and distribution of goods and materials. His experiences may be on-the-job in the Center administrative areas or in the educator planning areas as a clerk. They may be in the food service and store areas as a cashier checker. They may range from learning about wholesale distribution of architectural, drafting, interior decorating, and general art supplies to retail marketing of scientific instruments and supplies. They may be in the form of experience at writing. advertising copy for use in the Broadcast Center or in the Center newspaper.

In homemaking training and education, the student will learn not just the skills and knowledges he or she will use in the home, but perhaps even some elementary knowledges about careers as bakers, chefs, maitre d's, dietitians, home economists, tailoring, seamstress, millinery, power sewing, child care and child development specialist, and so forth. At this pre-career specialization level in the Middle School, the exposure will not be intensive for most students. But it may set the stage for future career development.

In industrial training and education, the student will have direct experiences with construction and repair activities using metal, wood, glass, synthetics, etc.

The construction, repair, and other activities, and the tools, processes, and materials the student develops and/or uses in this domain serve to reinforce what he is doing elsewhere and/or to make him aware of how such skills, arts, tools, processes, and materials are unique and relevant in and of themselves.

He can learn fundamentals of design and production in woodworking, sheet metal, machining, welding, photography, printing, tailoring, power sewing, and a variety of other areas that later may become specialties when he enters the 9-12 level.

Thus, although the student may later specialize in industrial education because of the special demands of the labor market and/or his own need to have a marketable skill, the Middle School program is primarily designed to reinforce such learnings at the pre-career level. This is desirable and lends stature and weight to the work in the 9-12 program.

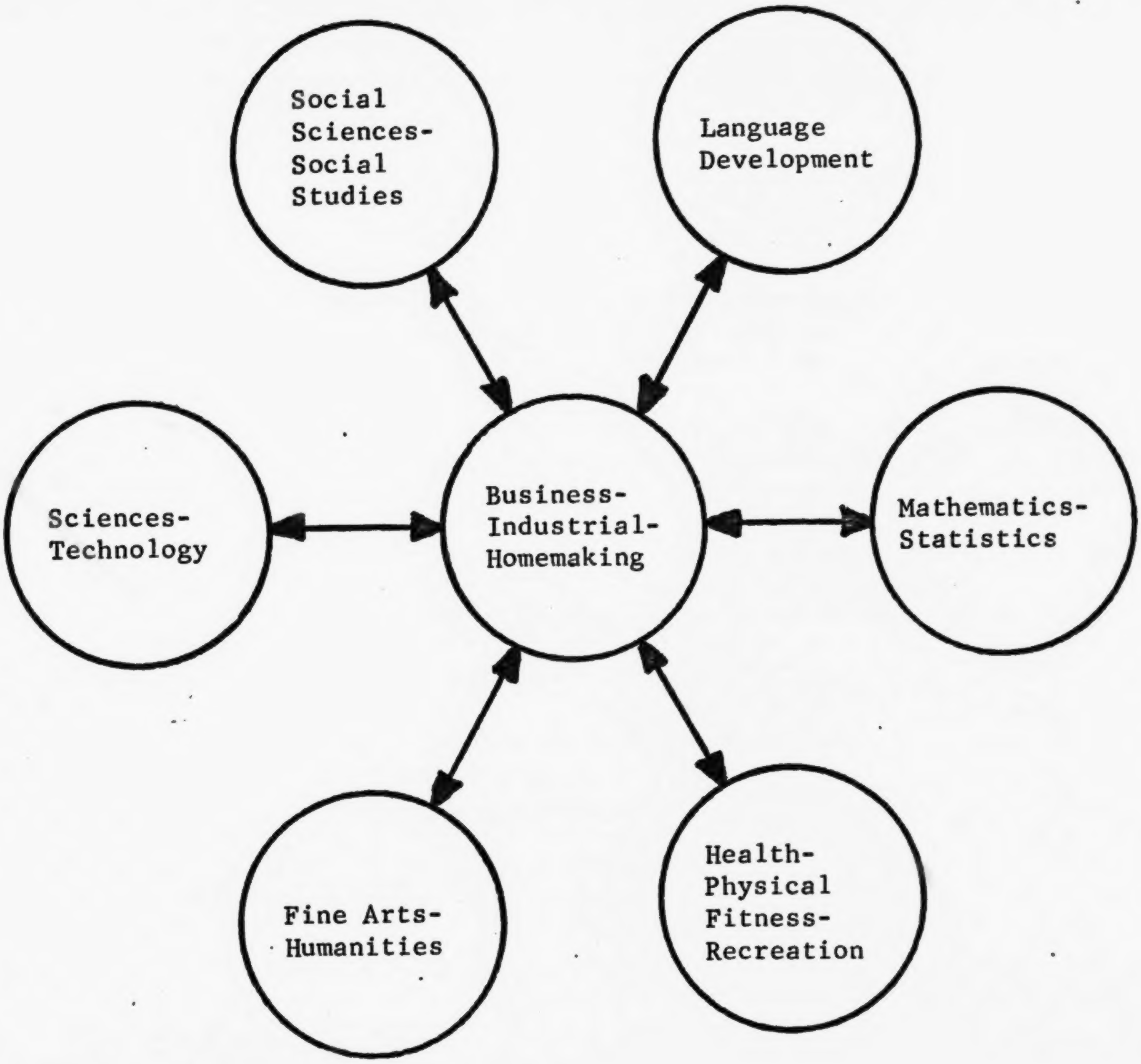
For some students, the business-industrial-homemaking curriculum domain may serve as an integrating influence upon learnings in the other domains. This again is the intent of the Middle School, and progress toward this end depends heavily upon the degree to which the various domains work together for the good of the student.

Since this domain is strongly supportive of other learnings, much of a student's time may be spent in areas such as the Design Center and/or the

Fabrication Center. Lesser amounts of time in this domain will be required in independent study or in small-group seminars meeting with other students. He may also meet with educators who are specialists in the area or with persons who are in business-industrial-homemaking as employers and employees inside and outside the Center.

6. Business-Industrial-Homemaking

The integration of other curriculum domains


Social Sciences-Social Studies
Language Development
Sciences-Technology
Business-Industrial-Homemaking
Mathematics-Statistics
Fine Arts-Humanities
Health-Physical Fitness-Recreation

7. Health-Physical Fitness-Recreation

Health (Physical and Psychological)

The program in health will provide experiences which teach about physical, physical-psychological, and psychological diseases and illnesses. The student will learn about the diagnoses of those diseases and illnesses and about their treatment. He will learn about himself in relationship to the prevention of such diseases and illnesses.

Such prevention knowledge will come to the student through exposure to subjects which reinforce learnings in personal behaviors including sex education and personal hygiene.

From the behavioral sciences and social sciences will come his knowledge and conceptualization about psychological and social processes which contribute to diseases, illness, treatment, and prevention.

Medical science and service will teach him diagnostic, treatment, and prevention processes.

Research studies he conducts on his own health will lead to statistical analyses in the mathematics-statistics domain and to the experimentation center and the computation center.

In these any many other ways, the student will learn about health. These are primarily general learning area activities, with extensions into some of the special learning centers.

Physical Fitness and Recreation

The Middle School's physical fitness and recreation program directs the students toward activities which are designed to either reduce tension and provide for structured relaxation exercises or to increase muscular strength, flexibility, and cardiovascular endurance.

In the latter function, two types of students are important, the student who needs development in these areas in order to do his other work and studies, and the student for whom an athletic career of some kind and degree is a developing trend.

In the former function, any student who needs to be active in a structured way so that he can return to his work and studies to function more productively should be able to go for such recreation.

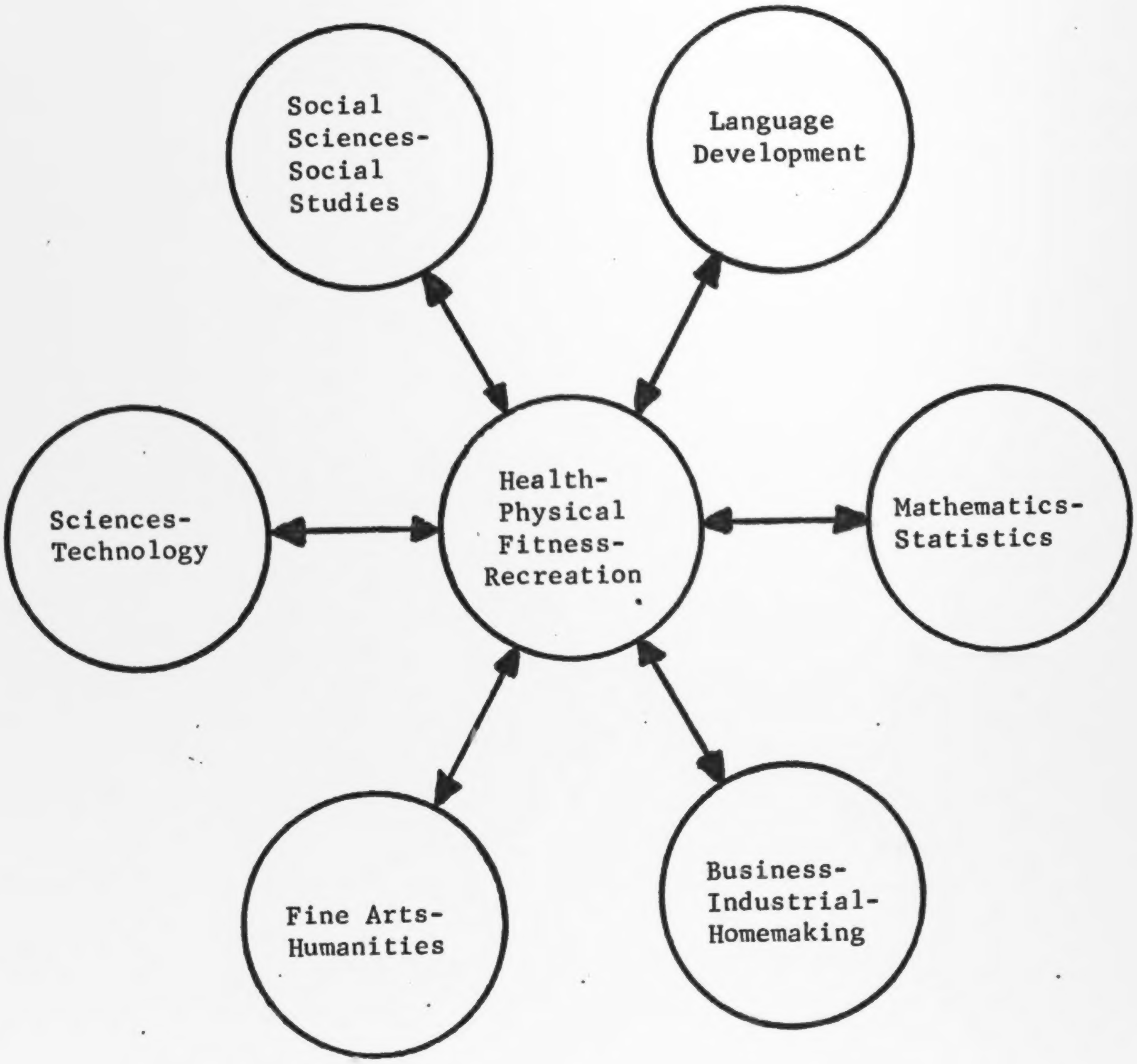
The main focus is upon the intellectual development of the student and the fitness and recreation component is primarily oriented toward enhancing that intellectual development. There are intellectual benefits which the fitness and recreation component can also teach; for example, the spirit of teamwork, but if the student needs to learn to work as a team member, this objective is not solely the domain of the athletic program, or the intramural program, or of a fitness and recreation program; there are many academic subjects in which teaming is possible. When it does involve the recreational area, then it should be possible for the student to go to that area.

The program should serve a student to the degree needed. Some students are active because they want to become engaged in organized team play. They may not need as much physical activity as consistently as do other students who may need that gentle push into fitness and recreation programs to initiate and maintain physical fitness and intellectual acuity.

The student will probably be engaged at one time or another in some kind of fitness and recreation activity during his studies in the Middle School. The activities he engages in should meet his real physical needs and in turn his real intellectual needs. No student will be placed or retained in an activity that is not relevant to his needs.

7. Health-Physical Fitness-Recreation

The integration of other curriculum domains


Social Sciences-Social Studies
Language Development
Sciences-Technology
Health-Physical Fitness-Recreation
Mathematics-Statistics
Fine Arts-Humanities
Business-Industrial-Homemaking

REFERENCES

Bottomly, Forbes: The Continuous Progress Center Concept: An Administration Proposal for Public Education in Seattle, Seattle Public Schools, 1966, 7 pp.

Dakan, Carl et al: Continuous Progress: The Final Report of the Seattle Citizens School Progress Committee, Seattle Public Schools, 1967.

Goss, Dale et al: The Seattle School District's Proposed Southeast Education Center: An Application to the U. S. Office of Education, Seattle Public Schools, 1967, 73 pp.

Goss, Dale; Little, Elmo; Moore, James: Addendum to the Southeast Education Center Project Application, Seattle Public Schools, 1968, 26 pp.

Goss, Dale; Little, Elmo: New Beacon Learning Center, Seattle Public Schools, 1967 Revised, 19 pp.

Goss, Dale; Little, Elmo; Moore, James; Stephens, Kent: Southeast Education Center General Recommendations, Seattle Public Schools, 1968, 15 pp.

Goss, Dale; Little, Elmo; Moore, James; Stephens, Kent: Southeast Education Center Planning Recommendations, Seattle Public Schools, 1968, 15 pp.

Goss, Dale; Little, Elmo; Moore, James; Stephens, Kent: Southeast Education Center Documentation, Seattle Public Schools, 1968, 53 pp.

Katz, Archie et al: Social Services in the Southeast Education Center, Council of Planning Affiliates, Seattle, 1969, 20 pp.

Kvamme, Olaf et al: Middle School Overview, Seattle Public Schools, 1969, 54 pp.

Moore, James; Stevens, William H.: Middle School Facilities Specifications, Seattle Public Schools, 1969, 166 pp.

Moore, James; Stevens, William H. et al: Analysis of the Middle School Educational Programs, Seattle Public Schools, 1969, 101 pp.

Small, Ivan R. et al: Southeast Education Center Citizens' Committee Interim Report, Seattle Public Schools, 1968, 52 pp.

Starr, David: Southeast Education Center Systems Analysis, Seattle Public Schools, 1968, 47 pp.

Starr, David: Trend of One, Seattle Public Schools, 1969, 26 pp.